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THE COTTAGE GARDENER,
COUNTRY GENTLEMAN'S COMPANION,
AND
POULTRY CHRONICLE.

A JOURNAL OF HORTICULTURE, RURAL AND DOMESTIC ECONOMY, BOTANY,
AND NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, Esq., AND ROBERT HOGG, Esq.

THE FRUIT and FORCING GARDEN, by Mr. R. Errington,
Gardener to Sir P. Egerton, Bart., Oulton Park.

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TO OUR READERS.

"NOTHING in the universe around us is at absolute rest" is an axiom in physics to which an Editor, above all other men, yields a ready assent. Nothing is ever at rest with him. Compositors, correctors, contributors, pressmen, are moving in regular orbits around him; and many a correspondent shoots across his system, resembling the comet, now so commanding of notice, not only in eccentricity, but in fiery aspect.

"Last week I sent you a query, and I repeat it; if it is not answered next week, I shall cease subscribing to a periodical so regardless of my interest."—"Why do you not devote more attention to bullfinches?"—"Pray give a report of the Fuddly-cum-Pipes Floral Exhibition."—"You insert many advertisements, but none about churns."—"Cannot you reduce your price?"—"You ought to increase the number of your pages."

These are only a very, very small portion of the suggestions received weekly, adding to the testimony, that "nothing is at absolute rest" about the Editors of THE COTTAGE GARDENER.

Like Charity,—and needful is it that they should be very like her,—"they suffer long, and are kind;" give a soft answer to all assailants; and, though remembering that Charity begins at home, they are careful that it shall not end there.

They obtain information about bullfinches; they show that, if they reported one local Show, they could not refuse to report the Show of every Fuddly-cum-Pipes throughout the United Kingdom; they seek for a knowledge of churns, and hope that it will add to the butter on their bread; and, although they cannot reduce their price, nor add to the number of their pages, they have largely increased their contents by widening their columns.

Nor is this the only illustration that "nothing is at absolute rest" about us. We have increased our staff of Reporters; and our contributors in every department have been strengthened; whilst, to complete our evidence, that "nothing is at absolute rest" with THE COTTAGE GARDENER, we gratefully acknowledge the increased amount of its advertisements and circulation. May these last-named evidences not only never attain "absolute rest," but strengthen in their onward movements every week; and we desire this the more, because our readers, as well as ourselves, will benefit by the power imparted by this "perpetual motion."

JAN 23 1895

INDEX.

- ACACIA, ARGYROPHYLLA, 25; *Riceana*, 25; *hispidissima*, 92; *graveolens* and *celastrifolia* culture, 133; *dentifera*, 242; *armata* management, 352
Acacias blooming in April, 39
Achimenes, 39; list of, 20; culture and list of, 60
Actinia mesembryanthemum, 411
Adamsia palliata, 396
Adder, swimming power of, 311
Adenostoma fasciculata, 86
Africa, plants in Central, 281, 293, 314
Agricultural Society's (Royal) Poultry Show, 266, 283
Ailanthus glandulosa blooming, 244
Aleyonium digitatum, 350
Algae, 332
Allium ursinum, development of, 259
Allotment system, an allottee's opinion of the, 394
Alstroemeria pelegrina, 328
Andalusians, points in, 231; characteristics, 249; merits of, 267
Anemone hepatica, 329; sea, 331, 350
Annuals, autumn sown, 353
Anthea cereus, 380, 396
Antholyza elliptica, 400
Ants, 153; destroying, 167
Aphides, plague of, 381
Apios tuberosa, 44
Apple, the, its habits and culture, 327, 345
Apples, cultivated by the ancient Britons, 181; list of, 391
Apricot culture, 81
April, plants blooming in, 189; *the*, 26, 56; the to, 200; *the*, 87; cost of a fresh water, 117; fresh-water, tanks, joints, 192; fresh-water, rock-work, 208; fountain, 209; divided; apparatus for microscopic, 224; syphon for, 277; fountain in, 280
Artillery Plant, 383
Asparagus roots, exposing in winter, 131
Aspidistra lucida variegata culture, 5
Atmosphere, pressure of, 194
August, hardy plants, &c., blooming in, 384; greenhouse plants for exhibiting in, 400
Australian seeds, 41
Australian Bronze-winged Dove, 124, 154, 184
Avenue, The, 377
Azalea sinensis, stock for, 29; *amœna* hybrids, 38; *ovata*, 292
Azaleas, propagating, 32; new hybrids, 80; treatment of Chinese, after blooming, 137; repotting, 252
BALSAM SEED, HARDINESS OF, 364
Balsams, superior, 282
Bands to prevent Peaches falling, 408
Banksian Rose, pruning a yellow, 398
Bantam, eggs, hatching, 216; (Game), characteristics, 372
Barbarossa Grape in a greenhouse, 88
Basket plants, 365
Baskets for plants, 80
Bath and West of England Poultry Show, 153, 168
Bedded-out plants, supporting, 204
Bedding-out, flowers, 17; rules for, 96; plants for spring blooming, 112; system, 141
Bedding plants, 106, 287; warning about, 185; time for propagating, 233; best time to strike, 269; Royal Family of, 411
Beds, size of, and bedding plants, 339
Beehives, and their covers, 280; artificial, in Central Africa, 315
Bee-keeper, the Cottage, 28, 134, 145; profit of bees; to begin; hives, 10; where to place hives; signs of spring prosperity; how to clean hives; signs of weakness, 45; Queens and Drones, swarming, artificial swarms, 60, 61; hives, dressing hives, hiving swarms, preventing casts, 71; giving room, and taking boxes of honey, 85; taking honey, young queens the best, 104; weighing in autumn, 105; protection of hives, 134; Calendar, 146
Bee-keeping, by Cottagers, 135; result of seven years, 146; this year, 151; results of ten years, 208, 238; in Devonshire, 347, 369, 398; taking end combs, 400
Bee, season and the weather, 134; stand, indicator, 102
Bees, swarm in stock's place, 23; saving and uniting, 28; instinct of, 43; recent articles on, 74; cottager's management, 74; cap glasses, to manage, 75; removing, Nadiring, 90; not working, 92; adding a swarm to a weak stock, 106; drone grubs in queen cells, 120; larvae of, 123; and cocoons, 123; cause of second swarms, 164; early swarms, 166, 179; drone-killing in June, 180; forsaking their hive, 180; joining swarms, 198; in Australia and New Zealand, 207; cottagers' plans with, 229; preserving brood, 245; in Tasmania, 263, 292; remedy for the robbing of, 275; slaughter of the queens, 330; to feed, 335; effects of chloroform on, 354; plundering hives, 367; collision on rail, 392
Begonia Wageneriana, 27
Begonias, list of, 21
Berberis trifurcata, 390
Beverley Poultry Show, 109, 169, 183, 199
Bignonia capreolata, 92
Birds purchased after entry, 232
Birmingham Summer Poultry Show, 63, 139
Biscuit, raised, 212; soda, 212
Black Beetles, 400
Blackberry wine, 369
Blackberries, drying, 212
Black Prince Pine Apple, 46
Blandfordia grandiflora, wild, 25
Blossoming, to promote and to retard, 187
Boisson's Nursery, 278
Bolbophyllum Neilgherrhense, 106
Bolting, to prevent, 187
Botanic Society's Show, 105
Botanical Gardens, their arrangement, 378
"Bouquet, The Illustrated," 365
Bouquets, where to obtain, 354
Bouvardias, 287
Box-edgings, to clip, 352
Breast bones, crooked, in fowls, 388
Breathing, its phenomena, 195
Bridgenorth Poultry Show, 417
Broccoli sowing, 40
Brown, Robert, memoir of, 176
Brugmansia arborea, to bloom, 122, 298
Brussels Sprouts, sowing, 40
Buckland Sweetwater Grape, 405
Bulbs, development of, 259, 276, 294, 312, 328; for conservatory border, 352; planting hardy, 381; treatment in removing, 415
Bunodes crassicornis and *gemmacea*, 410
Buyers and sellers, how to communicate, 370, 418
CABBAGE sowing, 40; supply of, 272; blight, 274
Cabbages and Cauliflowers, to prevent their bolting, 187
Cabbageworts all the year, 40
Cactuses, collection of, 38
Cælogyne Schilleriana, 379
Calanthe Dominii, 27
Calceolaria cuttings, time for making, 235, 244; management, 300
Calceolarias for bedding, 6, 366; to bloom in June, 41; turning yellow, 88; herbaceous, in pots, 385
Calder Vale Poultry Show, 371
Calendar of operations, 37
Calla Æthiopica, management, 121
Camellia rosæflora, 27; large, in the open ground, 316
Camellias, directions for their culture, 67; in open ground, 247; out of doors, 252; repotting, 252
Campanulata strigosa, 292
Canary, Cinnamon, 355
Canaries, Cinnamon Cock, 35
Cape Gooseberry, culture for dessert, 251
Capula sanguinea, 396
Carnations, list of, 116
Carrier Pigeons pitching short, 286
Cattleya Aclandiae, 9; *granulosa*, 106
Cauliflower sowing, 40
Ceanothus azureus as a bedder, 364
Celery culture, 108, 235; to prevent bolting, 187; leaf grub, 415
Ceterach officinarum, 151
Chamærops humilis argenteus, 38
"Chemistry of the World," 194
Cherry tree, an ancient, 43
Cherries introduced into Britain, 181; moving newly grafted, 354
Chicken, baked, 198; stewed, 198
Chickens, rearing by hand, 267; early, 318
Chimney smoking, 75
Chorozema Henchmanni culture, 133
Christmas Rose culture, 9; maturing the, 133
Chrysanthemum culture round London, 408
Cineraria management, 300
Cinerarias to bloom in June, 41; list of, 53; succession of, 150
Claytonia perfoliata found wild in England, 107
Clematis azurea, &c., soil for, 89
Clethra arborea culture, 137
Clanthus puniceus, 41; *Dampieri*, 54, 106
Climbers for cool greenhouse, 122
Clissold's Seedling Apple, 152
Clothing, science of, 195
Clubbing, to prevent, 299
Club-root, preventing, 415
Coast, planting for shelter on the north, 6
Coecoelypselum repens as a basket plant, 365
Cochin-China fowls, notes on, 36; characteristics, 64; hens, long broody, 184
Cockscombs, fine, 374, 375
Coffee of Barley, 225
Colchicum autumnale, development of, 295
Cole's Nursery, Manchester, 161
Colza oil, 383
Comb, artificial, for bees, 384
Composts for flowers, 18
Conifers, hardy, at Hazlewood Castle, 393
Conservatory, bulbs for, 352; to retain its temperature, 382; heating a small, 415, 416
Consolida Aconiti, 116
Consumption in poultry, 304
Convallaria majalis, development of, 313
Copland, E. A., his death, 193
Corridor, glazed, plants for back of, 297
Corynactis Almanii, 396
Covent Garden as a standard of value, 119
Cresses, culture of, 236
Crickets, to get rid of, 10, 182
Crocuses, list of new, 370
Cropping profitably, 118
Crops for particular localities, 144
Cross, results of a poultry, 418
Crystal Palace, Gardening, 27; Floral Bazaar, 37; programme, 84; garden, 107, 126, 171; Horticultural Exhibition, 117, 305, 321; Show, 213, 282, 302, 317, 336; Flower Show, 373, 389
Cucumber slicer, 134
Cucumbers, prolonged in bearing, 395
Cuenmis caffer, 281
Cumberland, Notes from, 179
Cup eake, 212

- Currant Apple sauce, 212
 Currants, Black, Red, and White, pruning, 175
 Curtis, the entomologist, 370
 Cuscuta Californica, 9
 Cuttle, a precocious, 245
 Cutting boxes, 24
 Cuttings, watering, 22; in sand and water, 22, 72; boxes for rooted, 121; slate boxes for, 299
 Cytisus Atlecana, &c., culture, 254
- DAHLIA, training and culture, 41; Show, Grand National, 414
 Dahlias, dwarf, for bedding, 69; pegging down, 150; list of, 391; management of dwarf, 403
 Dandelion Coffee, its qualities, &c., 247
 Dasylium glaucophyllum, 9
 Datura Wrightii, 414
 Davilliers' garden, 278
 Dead Man's Fingers, 350
 Delphinium formosum management, 244
 Dendrobium pulchellum, 9; chrysotoxum, 165; Falconeri, var., 209
 Devizes Chicken Show, 34
 Dichorisandra ovalifolia, 389
 Dorkings, weight of, 170, 199; gatherings about, 230; characteristics, 230
 Double flowers, cause of, 261
 Draining and cultivating level ground, 56
 Driffild Poultry Show, 304
 Drought, its effects on fruit trees, 324
 Ducks, breeding large, 36; Top-knotted White Aylesbury, 77
- EAGLESHAM, R., death of, 226
 Edgings, successional, 121; of pottery-ware, 229
 Egg, buying to improve stock, 76; eating hen, 286; chopping for chickens, 372
 Eggs, grumbings about bought, 13; packing for travelling, 34; from prize birds, 47; and fowls, buying, 49; Committee on buying, 63; will travel, 94; packing 124; not injured by travelling, 140; hatched after long-travelling, 184; travelling by rail, 213
 Endive culture, 235
 Enklyanthus reticulatus, 25
 Entomological Society's Meeting, 7, 71, 166, 193, 275, 409
 Epidendrum lacertinum, 45
 Epimedium violaceum culture, 133
 Epps' Maidstone Nursery, 271
 Equisetums, living specimens of fossil, 209
 Erica, Burnettiana, 53; herbacea for edging, 108
 Espalier trees over-luxuriant, 33
 Espaliers, new mode of training, 149
 Essex Agricultural Society's Poultry Show, 184
 Eugene Duval Pelargonium, 126
 Eugenia luma, 9
 Evergreen shrubs, their form and outline, 343
 Evergreens, removing large, 378
- FACT in Natural History, 338
 Falcons feeding their young, 213
 Family, supplying by contract, 118
 Farfugium grande, 65; culture, 150
 Feet of poultry, diseased, 140
 Ferns, at Ballymahon, 23; in Warden Case, aphid on, 33; culture in pots, 83; propagating by seed, 113; by division, 114; raising from seed, 190, 332; from cuttings, 191; list of hardy, 223; greenhouse, to divide, 327; culture, 332; filmy, 332; greenhouse, culture, and list of, 348; management of a few, 383
 Fevered hen, 268
 Filbert trees, 22
 Fleming, Mr. G., 301
- Flower gardens, breadth of view in, 237
 Flower-beds, size of, 339
 Flowers, influence of, 220
 Flues, for greenhouses, 70; pipes for, 123
 Forcing, best plants for, 73
 Fowl, roast, brown gravy for, 198
 Foxglove, sport in, 196
 Foxgloves, improved, 229
 France, Horticultural notes in, 148
 Fritillaria græca, 106; imperialis, 276
 Frizzled Fowl, native place of, 319
 Fruit crops, failure of, 368
 Fruit-tree pruning, 100
 Fruit trees, pruning young trained, 151; for fences, 240; cutting back when planted, 289; pruning trained, in summer and autumn, 308; limbs dying, 341; fruit dropping, 343; for a wall, in Derbyshire, 383
 Fuchsia stems for stakes, 203; cuttings, time for making, 235; fulgens, propagating, 370
 Fuchsias, cuttings, list of, 24; to winter, 352; list of differently coloured, 353; lists of, 390
 Fumago, moulds referred to, 131, 147, 162, 178
 Fumigation made easy, 21; of plants, 115
 Furnace, setting a, 383
 Fuseau, fruit trees trained en, 278
- GAILLARDIA CORONATA NANA, as a bedder, 106
 Galanthus nivalis, development of, 313
 Game fowls, gatherings about, 248
 Game preserves and fences, 239
 Gapes, cure of, 14; treatment of, 64; preventing the, 154; prevention and cure, 184
 "Gardener's Assistant, The," 134
 Gardening economics, 118
 Gardening for the week, 51, 65, 79, 95, 111, 125, 141, 155, 171, 185, 201, 217, 233, 251, 269, 287, 305, 321, 339, 357, 373, 389, 403
 Gardening, History and Literature of British, 180, 197; British, Roman, and Saxon, 181
 Gardeners' Royal Benevolent Institution, The, 206
 Gas-heating apparatus, Thomson's, 122
 Gaultheria procumbens for edging, 108
 Geese fattening, 418
 Gentiana acaulis for an edging, 108
 Geometric garden, to prove its accuracy, 306
 Geranium cuttings, time for making, 234, 244
 Geraniums, list of bedding, 5; variegated bedder, 10; to bloom in June, 41; Horseshoe-leaved, 62; new, 80; keeping in winter, 113; for bedding, 113, 142, 288; Scarlet Defiance, 301; roots over luxuriant, 315; bedding, 358, 368, 390; Scarlet, list of, 389
 Gesnera cinnabarina, 9; Donkarii, 379
 Gladioli crosses, 374
 Glowworms, breeding them, 265, 365
 Gloxinias, 39; culture, 15; list of, 20; in a Cucumber-frame, 288
 Gold fish, diseases of, 76
 Golden-chain Geranium, propagating, 391; culture, 400
 Golden Moonies, 34
 Goldfussia isophylla, 25
 Gooseberry, caterpillar, to kill, 23; enemies of the, 99, 163
 Gooseberries, summer pruning, 175
 Gorhambury, a glance at, 159
 Gourd culture, 333
 Grape, Black Eagle, 311, 327
 Grapes, spots in, 212; in Central Africa, 293; in Hamburg, cracking in greenhouse, 298; rusted, 301; indifferent, on vigorous Vines, 382
 "Grasses, Natural History of British," 134
 Grass-plot, patchy, 121
 Greenhouse, vinery management, 29; heating, 30; early flowers for a cold, 137; heating a small, 227; converting to a vinery, 297; keeping plants in unheated, 297; boiler above ground, 345; erecting an ornamental, 382; building a small, 385
 Grouping trees in Parks, 245
 Grouse in confinement, 335
 Guano, how to apply, 10; origin of, 111; analysis, 111; liquid manure, 167
 Guinea fowl rearing, 78; chicks, 372
 Gustavia insignis, 379
- HAMBURGH, Mr. Archer's Silver-pencilled, 36; characteristics of Silver-spangled, 109; Golden-spangled, characteristics, 138
 "Handy Helps to Useful Knowledge," 399
 Hard-wooded plants, cuttings of, 254
 Hatching, cause of bad, 301
 Hay fever, 279
 Heaths, early blooming, 20
 Heating, various modes, 415, 416
 Hens dying on their nest, 14; dying suddenly, 170
 Herbarium, drying plants for, 279
 Hewitt, Mr., testimonial to, 265
 Hive, Tegetmeier's bar and slide, 59, 72
 Hives, seasoning, 42; Payne's, 194; management of slides in, 225; dimensions for comb-bar, 378
 Hoes, proper form of, 365
 Holes saccharatus, 415
 Holly culture, 4
 Hollyhocks, list of, 84
 Honey, produce and value, 42; price of, 316; Chinese mode of taking, 349
 Horseradish scraper, 134
 Horticultural Society of Edinburgh, 23, 191
 Horticultural Society's Meeting, 51, 79; Show at Chiswick, 155; implements at, 158; fruit prizes, 176; their gardener, 217, 363
 Horwich Poultry Show, 418
 Hyacinth bulbs, storing, 75
 Hyacinth Show at Edinburgh, 22
 Hyacinthus orientalis, 276
 Hybridising Geraniums, 61
 Hydrangea cyanema, 9; Japonica management, 352; variously coloured, 400
 Hydrangeas, pruning, 167
 Hydraulic rams, 314
- IGNESENS SUPERBA Geranium, 146, 305
 Ilex cornuta, 209
 "Illustrated Bouquet," 39
 Implements exhibited at Chiswick, 211
 Incubator, its temperature, 170
 India-rubber plant, soil for, 121
 Indigofera decora, 209; dosua, 291
 Ireland, mildness of winter, 68
 Iris, from the Crimea, 52, 54; pumila, 86; Persica and Xiphium, development of, 312
 Ismelia Broussonetti, 292
 Isotoma senecioides, var. sub-pinnatifida, 379
 Ivy, to train with Creepers, 322
 Ixias, late-blooming, 33
 Ixiolirion montanum, or blue Lily of Syria, 330
- JARDINIERES, 79, 80
 June, hardy plants at Kew, blooming in, 226
- KALAHARI DESERT, plants in, 293, 314
- Kale sowing, 41
 Kefersteinia graminca, 27
 Kennedya nigricans and Zichya longiracemosa on the same plant, 105
 Kew Gardens, 357; bedding at, 358
 Kimpton Hoo, 2, 54
 Kniphofia uvaria, 358
 Knowsley, Peach trees at, 1
- LABELS for an arboretum, 365, 400
 Lantana culture, 89
 Lardizabala bitermata, 385
 Larkspurs, crossing, 201
 Lawn, improving patchy, 196; weedy, management, 299
 Layering Roses and Carnations, 353
 Leaves, plants with fine, 21
 Lemon pie, 212
 Lettuce culture, 236
 Lettuces, to prevent their bolting, 187
 "Lilies of the Field," 280, 330
 Lilium lancifolium frosted, 63; to pot, 326
 Lilioms, their development, 294
 Lime-washing of poultry-houses, 320
 Liparis Loeselii, 328
 Liquid manure for greenhouse plants, 89
 Liverpool Poultry Show management, 48
 Liverpool Show, fruit at, 143
 Loam, how to make, 82
 Lobelia cuttings, 270
 Lodgemore Seedling Apple, 152
 Loquat, 81
 Loudon, Mrs., death of, 248; memoir of, 255
- MACARTNEY Rose culture, 10
 Macclesfield Public Park, 18
 Madeleine Grape, 277
 Maggot in Onion, 325; in Turnips, 335
 Magnolia grandiflora, avenue of, 62
 Maize sowing, 415
 Manchester and Liverpool Poultry Show, 386
 March, hardy plants at Kew, blooming in, 26
 Marianthus cœruleo-punctatus, 242
 Markets, London, 14, 36, 50, 64, 124, 304
 Marl used by the ancient Britons, 181
 May, hardy plants at Kew, blooming in, 164
 Mayes, M., notice of, 70
 McEwen, death of Mr. G., 107
 Mealy bug, 415; exti.
 Melaleuca squarrosa
 Melons, growing in a plant pit, 135
 Merthyr Tydvil Poultry Show, 282
 Mesembryanthemum edule and turbiniforme, 281; crystallinum seedlings, hardness of, 365
 Mignonette, its culture, 360
 Mikania scandens, 385
 Mildew on Grapes, 212; on Vines, remedy for, 352
 Miniature greenhouse, 207; plants, soil, pots, and culture, 254; plants for, 311, 324
 Mirabelle Plum, 363
 Momordica balsamina, 385
 Moonies, Golden, 138
 Montmorency, horticultural notes at, 277
 Moss, the Carrageen, 192
 Moulds, various species of, 131, 147, 162, 178
 Mowana trees, 293
 Mowing Machine, Boyd's improved, 46
 Mowing-machine management, 414
 Mowing machines, 353; trial of, 158
 Musa ensete, rapid growth of, 106
 Muscadet Grape, 385
 Mushroom culture simplified, 392
 Mushrooms in Central Africa, 315

NECHAM, A., 198
Nectarine culture, 81
Nemophila maculata, 8
Newcastle Poultry Show, 34, 50
Newmiller-dam Poultry Show, 319
Nightingales, rearing the, 78, 124
Niphœa albo-lineata, *var.*, reticulata, 27
North Rode, visit to, 195
Nosegays, everlasting, 390
Notes from the Continent—Charlottenburg, 7; Cologne, 120; Berlin, 86; Hanover, 101; Brussels, 179; Ghent, 210, 238

OBERONIA ACAULIS, 165
Olea ilicifolia, 128
Olla podrida, 123
Omar Jackson, 210
Oncidium panchrysium, 24
Onion maggot, and culture, 325
Orange trees, shedding leaves, 32; repotting, 385
"Orchard House, The," 177
Orchard house, fruit trees in, 212
Orchard houses, forcing in, 375
Orchard trees, protecting, 414
Orchids, exhibited in May, 127; in June, 156; in September, 375; hybrid, 390
Orchis foliosa, 379
Ornaments of leaves and flowers, 381
Ortolans, 213
Oxalis, development of, 329

PALM HOUSE AT EDINBURGH, 85
Palms for the greenhouse and conservatory, 366
Pampas Grass culture, 298; situation for, 378
Pancratiums, the hardy, 400
Pansy management, 315
Paroquet, breeding Australian, 35
Partridge shooting, 385, 400
Passiflora racemosa, 92; amabilis turning yellow, 299
Passion Flower pruning, &c., 28
Peach, growing in Lancashire, 58; trees, saline compost for, 71; culture, 81; summer pruning, &c., 341
Peaches mildewed, 75; failing in America, 368
Pear, mildew, 225; its habits and culture, 359; its diseases, 360; in Lancashire, 363
Pears, for a south wall in Tyrone, 198; in summer, 221; in Lancashire, 273; at Montmorency, 278; list of, 391; which succeed in Lancashire, 415
Peas, to grow early, 188; list of early, 189; soil unfavourable to, 299; The Five, 351
Pegging down plants, 203; pins for, 224; hair-pins for, 242
Pelargoniums, culture in May and June; list of, 103; list of exhibited, 128; at Chiswick, 156; arranging, 157; cuttings, 254; and Geraniums, their difference, 248
Pens, cheap, for Poultry Shows, 336
Pentstemon Jaffrayanus, 27
Perilla Nankinensis, 385
Petunia cuttings, time for making, 234
Petunias, double and single, lists of, 411
Philodendron erubescens, 379
Phlox, Drummondii culture, 43; suffruticosa and decussata compared, lists of, 335
Photography—Carson's negative paper, 46
Physalis edulis, 251
Physical Geography, 66
Picotees, list of, 133
Pigeon, trap, 50; cock and hen to distinguish, 50; house, its construction, 110; Clubs of London, 319
Pigeons—The Helmet, 14; the Shield, 35; Miriotes, and Icc, 36; washing, 36; Australian Bronze-winged, 50, 320; natural history of, 94; management of, 154; net and hopper

for, 170; pairing and breeding, 200; feeding and tending, 215; Tumblers, 216, 320, 388; raising a flight of, 250; rationale of flying them, 231; diseases and parasites, 267; their merits, 284, 285; classification of, 285; model prize list, 286; House Tumbler, 320; notes on, 338; Almond Tumbler, 338
Pike, its voracity, 296
Pincushion beds, 244
Pinetum, The, 210
Pine-shoot insect, 198
Pines fruiting prematurely, 263
Pinus, large specimens of, 246
Pipes, instead of a brick flue, 58; plant to hide hot water, 179
Pitcairn Islanders, progress of the, 242
Pit for Melons and cuttings, 367
Plum tree shoots, stopping, 122
Poland fowls, 418
Polands, Black, 13, 50, 77
Polygala Hilariana, 165
Polygonatum, roseum, 106; punctatum, 209
Pomological Committee of the Horticultural Society, 218
Pomological Society, Meeting of, 84, 205, 228, 262, 290, 333, 344, 405
Pompones, why so named, 415
Pond, surface becoming green, 93; covered with green scum, 117
Potato, murrain, 192; crop, prospects, 265
Potatoes—Fortyfold, British Queen, Ash-leaved Kidneys, Early American, Prince of Wales, York Regent, Scotch Champion, and Alma, 26; Dean's Seedling, Brockley Kidney, Bread Fruit, 73; Webber's Kidney, Fiftyfold, Early Blue, Sheward's Seedling, Alstone Kidney, Elmley Ball, Old and Orkney Red, 74; Early Sydenham, 76; the Early Shaw, 92; descriptive list of Fluke, Jersey Blue and White, Walker's Large White, Champion Ashleaf, Brighton Kidney, Early Manley, Early Gloucester, Hodgson's Seedling, and Yellow Top, 115
Pots, effect of painting, 123
Poultry, feeding, 11; for exhibition, 12; breathing with difficulty, 14; houses, 46; brick floors to, 47; Shows, their officers exhibiting at, 49, 93; and egg sales, 77; fraudulent applicants for, 77; Shows, management, 76; entry charges at Shows, 93; yard, a lay of my, 78; thinning out, 168; Shows, arrangement for future, 318; future, 355; garden, plants for, 303; for profit, 337; sun required by, 387; keepers, caution to, 402
Prepayment, safety in, 124
Prescot Poultry Show, 249
Preserving without sugar, 74
Primula officinalis, 329
Prolific Sweetwater Grape, 406
Protecting or not protecting wall trees, 97
Pruning fruit trees, 100
Prunus sinensis (double) not blooming, 33
Pumpkin culture, 333
Putteridge Bury, flower-garden- ing at, 361; arrangement of borders, 362

QUAILS in confinement, 335
Quickset hedge, planting, 120

RABBIT, malformation of a, 388
Radish culture, 236
Rampion culture, 236
Raspberries, summer pruning, 175; drying, 212; wild, 207
Rats, to exclude, 165
Red spider, to destroy, 23; on wall fruit, 114; to subdue, 354
Reichenheims' garden, 86
Rhododendron ponticum hardy, 33; hirsutum and ferrugineum, to distinguish, 33; virgatum, 54;

barbatum, 73; Edgworthii in Ireland, 151; argenteum, 165; seedlings, protecting, 241; virgatum, 209; Griffithianum, *var.* Aucklandii, 292
Rhododendrons, culture of, 76; 253
Rhubarb, small-stalked, 282
Ribbon style of bedding, 95
Richardia Æthiopica management, 121
Ringing fruit trees, 400
Ringing the Grape Vine, 163
Robin, anecdote of the, 393
Rockery, stone for, 33
Root-pruning fruit trees, 378
Rose, culture, 219; cuttings, failure, 209; cuttings, 219; buds not opening, 229; mount at the Crystal Palace, 307
Rosery, formation of, 221
Roses in pots, list of, 53, 54; Banksian, not blooming, 90; exhibited in pots, 128; Grand National Exhibition of, 204; for standards, 298; layering, 353
Rouen Duck, prolific, 199
Runt Pigeon tumbling, 372
Rushock Pearmain, 206

SAA-GAA-BAN, 44
Saffron Crocus, its diseases, 346
Sagartia, dianthus, 380; parasitica, 397; anguicoma, bellis, dianthus, and troglodytes, 409
Salad culture, 235
Saline air injurious to plants, 33
Salt for Peach trees and other purposes, 190; as a manure for the Peach tree, 379
Salvia gesneræiflora losing its leaves, 90; patens and Calceolaria amplexicaulis in a bed, 150
Sands, on the, 331, 350
Savoy sowing, 41
Saxifraga purpurascens, 292
Sea-weeds, beauty of the, 177; preserving, 226; flowers, their classification, 379, 396; notes on, 395, 409
Sea worms, 56
Seeds, hardness of, 220; and seedlings, hardness of, 364
Sewage sediment, 92
Slowworm, the, 292
Shanking in Grapes, 415
Sheffield prize list, 34; Poultry Show, 213
Sheltering fences, 240
Solanum jasminoides, 242
Sorghum saccharatum, 272
Spanish chickens, lame, 50; hens broody, 184
Sparkenhoe Farmers' Club Poultry Show, 401
Spinach, to check its going to seed, 187
Spot on Pelargoniums, 93
Spring flowers, 95; list of, 20
Sprue, 46
Stocks, Brompton and Queen, 227, 261; cause of double flowers, 316
Strawberry, forcing, 90; British Queen, 121; culture, new mode, 165; Oscar, 218; culture, 265
Strawberries in pots, 182; raising from seed, 248; staged bank for, 366
Stylidium armeria, 242
Super-phosphate of lime as a liquid manure, 123
Sulphur, applying to Vines, 148
Swainsonia purpurea, blooming, 75
Swarming, origin of, 227, 414
Swarms leaving hives, 244

TACON, a disease of the Saffron Crocus, 346
Terrace garden in summer and spring, 300
Thrush, rearing the, 78
Thysacanthus Indicus, 209
Toads changing colour, 152
Town, flowers in a smoky, 415
Tritoma uvaria, its beauty, 358; Tritonia aurea, with Tritoma uvaria, 358
Tritoma and Tritonia, prices of, 397
Tropæolum elegans cuttings, 270; tricolorum, to pot, 326

Tubers, development of, 259, 276, 294, 312, 328
Tulip, development of 260
Tulips, early, 102
Turkey, its introduction, 215
Turkeys, wild, 199
Turnips, ancient culture for cattle, 181; caterpillars on, 229
Tussilago Japonica the same as Farfugium? 66
"Two men shall be in the Field," 394

UNITY OF EXPRESSION, 237

VALLOTA PURPUREA MAJOR, 390
Van Houtte's garden at Ghent, 238
Vanda gigantea, 54; suavis, 72
Vases, planting small, 196
Vegetable crops under overhanging fruit trees, 310
Ventilating a greenhouse in winter and spring, 42
Ventilation of garden structures, 129
Verbena cuttings, potting, 32; venosa cuttings, 62; cuttings, 269; culture for exhibition and list of, 8; pegging down, 192; too tall, 381; descriptive list of, 412
Viburnum plicatum, 128
Vinelaterals, stopping, 29; leaves scorching, 122; leaves diseased, 248; mildew, 352; culture, extensive, 395
Vinery, conservatory, and steaming apparatus, in one, 393
Vineries, arranging and heating borders, 136
Vines, retarding in a cellar, 42; in pots, 42, 138; stopping and syringing, 88; which have been lifted, 135; shortening and removing laterals, 137; early-fruited young, 221; to prevent early breaking prematurely, 236; in pots in a pinery, 264; and Pines together, 264; enclosing partly, 264; tuberous rooted, 282
Vineyards established in England, 182, 197
Viola calcarata, as edging plant, 270
Violets, bed for, 9; Neapolitan, ill-treated, 367
Virginian Creeper, to train with Ivy, 322

WALL TREES, protecting, 97
Warder's hives and Richardson's book, 11
Wasps' nests under water, 370
Water Melon of Africa, 281
Water Lilies, moving, 385
Water garden, 399
Watering, a few notes on, 166
Weekly Calendar, 1, 15
Wellington Road Nursery, 5, 20
Wheat, dibbled, 228
Wild flowers, how to learn about them, 146
Window greenhouse, 89
Wistaria consequaria not growing, 33
Wood Pigeon, attempts to domesticate, 355
Woodlice, trapping, 183; destroying, 265
Worcester Poultry Show, 199, 231, 355, 372
Worrall controversy, 12, 47, 64, 109; doings at Liverpool, 13
Worms, destroying, 62

XIPHIDIUM FLORIBUNDUM, 165

YATES' NURSERY, MANCHESTER, 4
York, proposed Poultry Exhibition in, 154; Show, 199, 284
Yucca gloriosa, blooming, 311; large, 415

ZAMMARA, 62
Zeyria macrophylla, 54
Zinc labels, ink for, 76
Zoophytes, 379
Zygopetalum brachypetalum, 25

WOODCUTS.

	Page.		Page.		Page.
Nemophila maculata...	8	Wire Espalier	149	Fences, various	240
Cuscuta Californica	9	Peridium of Capnodium Persoonii	162	Rhododendron Clump	241
Oncidium panchrysum	24	Peridia and Sporidia of Capnodium Caro-		Allium ursinum, <i>bulb</i>	260
Zygopetalum brachypetalum	25	liniense and expansum	162	Tulipa Gesneriana, <i>bulb</i>	261
Pigeon Miroité	36	Branched peridium of Capnodium Aus-		Fritillaria imperialis, <i>bulb</i>	276
Apios tuberosa	44	trale	163	Hyacinthus orientalis, <i>bulb</i>	277
Epidendrum lacertinum	45	Vine branch ringed	163	Lilium candidum, martagon, and bulbi-	
Marine Zoology	58	Pigeon Net and Trough	170	ferum, <i>bulbs</i>	294
Bar and Slide Hive	59	Peridia of Capnodium Footii and Mereu-		Colchicum autumnale, <i>bulb</i>	295
Vanda suavis	72	rialis perennis	178	Iris Persica and Xiphium, <i>bulbs</i>	312
Rhododendron barbatum	73	Fascicles of threads of Glenospora		Galanthus nivalis, <i>bulb</i>	313
Adenostema fasciculata	86	Curtisii	178	Alstrœmeria pelegrina, <i>bulb</i>	328
Fresh-water Aquarium	87	Aquarium, fresh-water	192	Liparis Lœcellii, <i>bulb</i>	328
Indicator Bee Stand	102	Tank	193	Saffron Fungus	346
Pigeon Ladder	110	Pigeon Nest—Pan, and Scraper	200	Hand Hoe and Label	365
Consolida aconiti	116	Aquarium Rockwork	208	Anthea cereus	380
Asci and Sporidia of Scorias spon-		———Fountain	209	Hermit Crab and Sagartia parasitica	397
giosa	132, 147	Divided Aquaria	224	Sea Anemones and Sea Weeds	411
Sporidia of Capnodium elongatum	148				

WEEKLY CALENDAR.

Day of Mth	Day of Week.	APRIL 6—12, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
6	TU	EASTER TUESDAY.	29.785—29.558	63—38	S.W.	—	27 af 5	39 af 6	2 a 43	☾	2 28	96
7	W	PRINCE LEOPOLD BORN, 1853.	29.949—29.886	63—43	S.W.	.12	24 5	40 6	3 14	23	2 11	97
8	TH	Acacia juniperina.	29.916—29.758	60—37	S.W.	.11	22 5	42 6	3 38	24	1 54	98
9	F	Acacia taxifolia.	29.002—29.501	63—32	S.	.04	20 5	44 6	3 56	25	1 37	99
10	S	Anthocercis viscosa.	29.465—29.370	65—39	S.E.	—	18 5	45 6	4 10	26	1 20	100
11	SUN	1st, or LOW SUNDAY.	29.523—29.417	50—30	N.W.	.09	15 5	47 6	4 22	27	1 4	101
12	M	Aotus incana.	29.463—29.038	54—32	S.W.	.06	13 5	49 6	4 34	28	0 48	102

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 55.9° and 36.0°, respectively. The greatest heat, 74°, occurred on the 8th, in 1832; and the lowest cold, 21°, on the 6th, in 1851. During the period 112 days were fine, and on 105 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE advantage of having dug the ground into ridges will now be perceptible, as it will be in a drier and more mellow state when levelled down, and dug for seed sowing, than if it had been left on the flat.

ASPARAGUS.—Sow, and give the beds the spring dressing before the shoots begin to grow.

BASIL.—Sow in a warm-sheltered spot in the open ground; but, as it is rather a tender annual, it is generally the best plan to sow in pans, or on a slight hotbed, and afterwards to plant it out.

BEANS.—Sow the broad sort for a principal succession. Taylor's *Broad Windsor* is a heavy cropper. Earth up the early crops; but, before doing so, lay a little soot close to the stems, to protect them from slugs.

BORECOLE.—Sow, for the first crop, what is commonly called the *Scotch Kale*; it is the best variety.

BROCCOLI.—Most of the varieties may be sown the latter end of the week.

BRUSSELS SPROUTS.—Sow for the first crop.

CABBAGE.—Sow, transplant from the autumn-sown beds, and earth-up the early crop, when the weather is favourable.

CAPSICUM.—Sow in heat, to plant out.

CARROT.—Sow, for the main crop, the *Long Orange*, a favourite old sort.

CAULIFLOWER.—Continue planting out those preserved in frames during the winter, and earth-up the early planted as soon as it can be done, to prevent them from being loosened and injured by the wind.

CELERY.—Sow in rich soil under glass, or on a warm border.

CHERVIL and AMERICAN CRESS should now be sown.

CUCUMBERS.—As soon as the heat is observed to fail, fork up, and add to the linings; or if the heat is entirely gone, make fresh linings. Regulate the shoots. Sow in heat for ridging out.

GARLIC and SHALLOTS finish planting.

HERBS.—Sow of the annual sorts, and propagate others by cuttings, or by divisions of the roots.

LETTUCES.—Sow on a warm border, and plant in open situations.

ONIONS.—Sow for the main crop, if not done before.

PARSLEY.—A good sowing should now be made, if not done already. Clean and loosen the soil between rows sown last season.

PEAS.—Sow the marrow kinds in quantities. Earth-up, and stick the early crops.

POTATOES.—Plant the main crops, if not done in the autumn.

RADISHES.—Sow the Turnip-rooted, protect at night, and, when they have vegetated, from birds.

RHUBARB.—Sow in strong, rich soil, and forward the roots by placing a few handglasses over them.

SEA-KALE.—Sow thinly on light, rich ground. Continue to force, if wanted, before it grows much. Re-

move the covering from each stool immediately it is done with.

SPINACH.—Sow the round sort in the open ground, and the *New Zealand* in pots, placed in a gentle heat.

STRAWBERRIES.—Plant, though late, and finish the spring dressing of old beds.

TURNIPS.—Sow the *Early Dutch*, or *Stone*. The sort called the *Snowball* is an excellent variety.

FRUIT GARDEN.

GOOSEBERRIES and CURRANTS.—Finish pruning, if not done before.

GRAFTING.—Finish as soon as possible. Be watchful not to allow the clay applied to early grafts to crack, or fall off.

VINES.—Rub off useless shoots.

WALL TREES.—Prune, and nail, and protect, even before the blossom opens; removing the covering in fine weather.

FLOWER GARDEN.

ALPINES.—Plant out on rockwork.

ANNUALS.—Sow the hardy sorts in borders, and the tender sorts in heat. Pot off the autumn sown.

AURICULAS.—Sow seeds in pots. Shade blooms.

BIENNIALS and PERENNIALS.—Plant where they are to flower.

BULBOUS ROOTS.—Any remaining out of ground, plant as soon as possible.

CARNATIONS and PICOTEEES.—Pot for blooming, and protect from heavy rains. Plant out where they are to remain to flower.

DAHLIAS.—Propagate; divide roots.

PANSIES.—Plant out, and propagate by side-shoots in light sandy soil under handglasses; to be shaded from sun until rooted.

PINKS.—Plant out, and top-dress autumn-planted beds. Sow seeds of the double *Indian*; it is a beautiful variety.

ROSES.—Finish transplanting as soon as possible, and prune them for late flowering.

STOCKS.—Sow *Ten-week* and *German* for transplanting and blooming in the open ground.

TULIPS.—Support flower-stems as they advance, and protect, if possible, from frosts, heavy rains, and high winds.

WILLIAM KEANE.

PEACH TREES AND OTHER OBJECTS AT KNOWSLEY.

THERE are few situations but what are favourable for something wanted, in the market of the world; as the most barren districts are often richest in mineral wealth, so the soils, or situation, least favoured by Nature in a general way, very often produce a something or other better than those whose fertility has become proverbial. And there is often much surprise felt, at discovering well-grown specimens of certain

things in places least expected. A bleak, cold situation is far from being without its benefits, although they be few compared with one of an opposite character. But the one I mean more particularly to call attention to, is that near the sea coast and consequently within reach of salt water spray in times of high winds: there are many such situations, and it is only people living at one of these who can fully comprehend its difficulties; but in the present instance it is intended to confine our observations to that of one article only—the Peach—of which much has been written and said in other quarters.

Foreigners invariably say, that English people have but an imperfect knowledge of the value of common salt; and I believe that, in the cultivation of the soil, it is not half so much used as it ought to be; not that it ought to be used everywhere and for everything, but a judicious application of it will doubtless improve many crops, if given at the right time. And, perhaps, if we examined carefully the borders of the best Peach walls, we should find that they contained more salt in their composition than those in which the Peach trees do badly. This ought, therefore, to teach us to use salt, in moderation, when Peaches are grown in soils lacking that ingredient. I am induced to offer the above remarks, by having noticed good Peach trees in situations near both the east and west coasts, even beyond the range where Oaks, and other indigenous trees, seem to thrive, and in such places I have seen Peach trees do tolerably well. Certainly, there is a distance within which they will not prosper; but, I believe, the most healthy trees in the kingdom will be found within the range of three and twenty miles from the coast, all around. The influence of salt spray is felt, as is well known, full six miles, or more; and many delicate plants will not endure it at even a greater distance than this; but some excellent Peach trees will be found within this belt, and probably the soils the other good trees are growing in, may contain the requisite quantity of this all-important seasoning in their composition.

I am partly induced to offer the above remarks, from having been favoured (last summer) with a sight of the magnificent gardens of the Earl of Derby, at Knowsley, near Liverpool; where I certainly saw one of the best furnished Peach walls I ever saw in my life. The wall (as near as I can recollect) seemed to be about fourteen feet high, and of great length, but from the bottom to the top it was closely covered with as fine healthy wood, in suitable proportions, as could be wished for by the most fastidious observer. Many other things were also good, as the Grapes, Pines, and general kitchen garden crops. Now this place, I was told, was only six miles in a straight line from the coast; and the influence of the terrible south-wester was visible on all single trees, and to windward of those in plantations many Coniferæ would not grow at all. The worthy house-steward had made many ineffectual attempts to ornament the front of his cottage (a pretty one in the Park) with a couple of Irish Yews, but in vain; for, after lingering on for a few months, they always showed brown on the windward side, which speedily blackened, until the plant (if allowed to stand so long) ceased to live. Many other things suffered in like manner. The squall across the Irish Channel carried with it much spray, even to that distance; the consequence was, that many shrubs had far from a healthy appearance; Rhododendrons seemed to be at home in the soil; and, as stated above, the Peach trees did remarkably well.

Doubtless some inquiry will be made regarding the soil, which was of a black sandy loam, not stiff, and not very light; and, by the appearance of everything I saw, it would appear to be pretty deep. The Vines

looked remarkably well, and bore excellent crops of well-coloured fruit, which would have run some of the crack Show men a hard race, at some of the Metropolitan meetings, if they had been exhibited there; but Mr. Jennings, the able and worthy gardener at Knowsley, does not send to these Shows, though I believe, that at one held at the Lancashire capital, where competition and prizes equal that of London, Mr. Jennings carried off the principal laurels.

Knowsley, the princely seat of the Earl of Derby, is one of those places which a stranger cannot visit without being struck with the affluence, good management, and dignity, with which everything is carried out; every building, even those for the humblest purpose, is executed in the best manner that skilful workmen can do it. The panelling and carving of the stables would grace a drawing-room, and the offices are perfect models of their kind; and if I were allowed to invade privacy so far as to make remarks, I must say, from what I witnessed at Knowsley, that *hospitality* was not the least of the many good points for which this place is famed; and to Mr. Jennings, whose courtesy in shewing myself and friends the many things under his charge (all of which were in excellent order), our thanks are certainly due; and we left Knowsley regretting, that the monster steam, on its iron horse, did not give us more time to spend, on a spot which seems to have been well (and I believe hospitably) kept up for many generations. Hoping it may continue to hold the worthy place, it now does, for centuries to come, seems the desire of all, and none more so than that of the writer.

JOHN ROBSON.

KIMPTON HOO.*

THIS massive residence of Lord Dacre, is situated on elevated ground, about seven miles from Hitchen, and four miles from Welwyn. The village of Kimpton is about a mile to the south, and the snug village of Whitwell about the same distance to the north. A beautiful spring rises at a short distance from Whitwell, and flows eastward through the village, as a cheering rivulet—unless where it is widened into large beds, for Watercresses, which find their way in large quantities to the breakfast tables of the Londoners. On some of these beds the pebbly gravel is so clean, the water that passes over them so shallow and pure, and so much attention paid to the culture of the Cresses, that could they be easily distinguished at market, the admirers of such a medicinal vegetable would cheerfully pay more for them, than for those brought from a deep sluggish stream, or from a wide ditch-like reservoir, with little in appearance to mark it from the stagnant morass. Rather than knowingly feast upon the latter, I would be content to put up with the extra bitterness in those Cresses, that may be procured from any rather shaded part in a kitchen garden, that could be moderately supplied with water.

After passing the north side of the kitchen garden,

* Some inquiries have been made as to the meaning of the word "Hoo." It may be popularly described as meaning an *eminence*, as Silby Hoo, Stagen Hoo, Luton Hoo, and Kimpton Hoo, called often The Hoo, *par excellence*, are all so placed. The name Hoo, however, is correctly taken from an ancient family of that name, who are said to have held large possessions in the counties of Hertfordshire and Bedfordshire, as far back as the days of King Canute; and all, or most of whom, left their names on commanding sites of ground, showing their good taste in choosing such for their residences. William Hoo, Esq., held court at Kimpton in the days of Elizabeth. A Sir Robert Hoo was buried at Luyton (Luton) in 1310; Thomas Hoo, Esq., was buried at Kimpton in 1480, and his son was interred beside him in 1516. Through marriage, Kimpton Hoo came into the possession of Sir Gilbert Hoo Keate, about 200 years ago. It would be out of place in this work to trace the matter further, and it is only interesting as showing on how many places an old family can leave traces of their existence, and wealth, and power.

and separated from the highway by a dense belt of plantation, the stream, owing to being dammed back, swells into a large irregular lake, which forms a fine feature when seen from the elevated ground in the sunshine, especially when taken in connection with the nicely grouped timber in the park. The principal approach passes over a stone bridge, at the extremity of the lake, which bridge has a fine effect in the landscape, when peeps of it are seen through the foliage of the trees.

The direct communication, at present, from the kitchen garden to the mansion, over the rising and undulating ground of the park, is by means of a narrow undressed walk. This walk, I understand, was made by the late Lord Dacre, and (though still having a firm bottom) the sides and the centre, too, in many places, are now grown over with the grass of the park. It would have been an easy matter to line out the sides, and give to it a somewhat artistic and modern appearance; but, I was given to understand, that the late lord would not allow it to be done, and, in this instance, would present a lesson (would we only take it) to those gardeners, who are never satisfied unless their walks present at their sides a trim outline of raw earth, whatever the circumstances of the case. A new walk has several times been staked out, and never yet been made, though I know of no possible objection to such an arrangement; but made, or unmade, had I a voice in the matter, I would wish a part, at least, of the old walk to remain as it is, and even look upon every bit of grass on it as sacred.

On leaving the kitchen garden, there is nothing to interfere with any style of walk or road; but, on getting over the brow of the rising ground, you are among the remains of what must have been a splendid grove in the days of Queen Bess, such as the skeleton of an Oak, which, I regret, I did not measure, but large enough around and within its hollow bleached walls to form a hardy fernery, for many of our amateurs; other Oaks, telling that they had witnessed some hundreds of summers; Spanish Chestnuts, some rather vigorous still, but showing the marks of age, and all proclaiming what kind of quarters they had got, that enabled them to measure, at two feet from the ground, from fifteen to twenty-five feet in circumference. Fine groups, at no great distance, of full-grown bonnet-headed Scotch Firs, contrasting nicely with the varied foliage of deciduous trees; but which Firs we generally associate more with the wild and picturesque, than the artistic; and nearer the house, a fine old Oak, still retaining a few green boughs, though containing within it many a pound of lead, from having been used as a target for rifle practice. Who, when surveying such denizens of the olden time, in the midst of other park scenery, would like to have a luxuriating amid the ancient periods rudely interfered with, by observing at his feet the marks of the edging-iron and clipping-shears of the gardener of the day? Tastes will ever differ, and it is well they do. On once visiting an old ruin in a wilderness of a wood, I found that enthusiasm for the antique had taken the direction of trimming the Ivy, that was hanging from the mouldering walls, making neat little pathways among, and even removing the long grass from, the moss-covered stones! If there is anything in the association of ideas, most men would have preferred the absence of all this neatness, even if they had to pick their way up to the knees in herbage, and to receive some compliments from stinging Nettles, which never seem more at home than when revelling amid the wrecks and ruins of man's magnificence.

Though doubting of my correctness, I shall suppose that the entrance front of the mansion faces the north, the opposite side the south, the stables and offices will be clustered on the west, and another park, or garden,

front of the mansion, will stand to the east. Though I have frequently looked in upon my neighbour, Mr. Cox, at the kitchen garden, I have seldom got as far as the house. On my first visit many years ago, the house and offices were distinguished for their massive unadorned simplicity, there being nothing at all in the way even of ornamental gardening, with the exception of some walls and beds in a sort of wilderness of wood and shrubbery, to the south side of the offices. On my last visit, on the same day I called at the *Node*, I found that great changes and improvements had been effected. A belt of evergreens had been planted in front of the offices, so as to comparatively throw them into the shade; a new direction had been given to the main approach; and a large landing square of gravel formed in front of the house; an architectural artistic appearance had been given to the mansion itself, by surrounding the roof with an elegant parapet, forming a stone terrace for the landing place, and separating that from the gravel, by a wall and open stone balustrading. That wall and balustrading are carried eastward, past the mansion, between thirty and forty yards, and then turned at a right angle southwards, and taken as far that a parallel line from the south-east corner of the balustrade would leave thirty or forty yards between the south front and the boundary there, which, instead of being a balustrading, is a sunk fence, or ha-ha. From that south-west corner, another sunk fence is taken at right angles with the other going direct south; and, as is now the fashion, a straight walk goes along the inside of the fence within two or three feet of it, that fence and walk being seen from almost any part of the inclosed space, and from almost every window, I should suppose, on that side of the mansion.

This enclosed space is devoted to lawn and flower-beds, and though the groundwork has been admirably managed, there is a want of satisfaction about the whole, arising chiefly from the opposite facts, that too much, or too little, has been done in the way of walls and balustrading.

1. To render this enclosed space in unison with the parapeted style of the mansion, and to preserve unity of expression, the open balustrading should be continued along the top of the sunk southern boundary, and then across to the south-west corner of the mansion. There would then be an uniqueness in the whole enclosed space, which would be perfectly independent of any, and whatever was attempted beyond it, in the way of ornamental gardening.

2. This balustrading need not be so high, as to interfere with the view beyond; but, in the present case, the view does not seem to extend more than 150 yards over the park, until it reaches a natural boundary; and many, if there was not a balustrade, would have preferred taking in that part, in preference to forming a deep sunk wall; and turning that space into rough ornamental ground, with groups of evergreens, and specimens of the Pine tribe, &c., and this, at any rate, would have avoided the mistake of forming the long sunk wall, with the gravel walk on its top, on the west side of this paddock, and leaving a considerable open space between that walk and the wilderness of wood and shrubbery, already referred to.

3. Leaving the main enclosed space as to its arrangement just now, and merely mentioning that the walk on the south side is something like five yards from the sunk fence; and, so far, free from the objections to the wall, and walk close to it, that start in a direct line southwards, and at present terminate in nothing attractive; and supposing that these walls are to remain as they are, and the balustrading is not to be continued, then the next great improvements would be, the continuing the main walk westwards into the shrubbery and wilderness; the planting a mass of

evergreens, so as to conceal as much as possible, from the ground and windows, the long sunk wall that runs southward; the removing altogether, or turfing over the present walk close to that boundary, and, if retained at all, placing it near to the wilderness wood, and occupying the ground between it, and this at present objectionable boundary, with groups of Rhododendrons and other evergreens. I would not have said so much on this, but that I cannot see the propriety of the prevalent fashion of making a concealed fence, and then sticking a walk on the top of it, that you may have the pleasure of looking into a ditch that you profess a desire to conceal. R. FISH.

(To be continued.)

CALLS AT NURSERIES.

MR. R. S. YATES, SALE, NEAR MANCHESTER.

(Continued from page 364, Vol. XIX.)

THERE is here a large house with a three-spanned roof, which Mr. Yates calls his hospital. In it he keeps his Camellias, that have few or no flowers, and all Rhododendrons, and other shrubs that have been forced to ripen their wood, and form buds for the next season. Such a house is an useful adjunct to the establishment, and he finds that shrubs that have been forced and gradually hardened off, and put to rest, are more easily forced a second year. This is a principle that is well known to gardeners in the habit of forcing Vines, Peaches, Cherries, and other early fruits. They acquire, by such treatment, a habit of earliness, and start more freely and boldly at the desired season than such as have not been forced at all.

Descending from houses with brick walls, glass roofs, and hot-water pipes, I must next notice some cheap pits used for protection and shelter. They are formed with turf walls, covered with a frame of boards, upon which the glazed lights rest. They last, I was told, several years. The first I saw had a span roof; in the centre of this is a pit filled with leaves, and in it a large number of Roses, in pots, just starting their buds. The north side was banked up outside with earth, and on all the length of this back wall, Moss Roses had been laid through it, their branches projecting inwards. They had been so planted two years, and the wall was quite covered with them. I was assured the quantity of flowers they produced, about the end of April, or beginning of March, was prodigious.

In the other lean-to pits, there were Rhododendrons, Lilacs, Roses, Deutzias, &c., intended to succeed those in flower in the forcing houses. Also, Cauliflower plants, Lettuces, Parsley, Radishes, early Potatoes, and other useful things for the table. After these are gathered, or cleared out, the pits are emptied, a hot-bed of dung made inside, soil laid on the surface, and Melons and Cucumbers planted. I was assured these yielded a good, useful, and profitable crop, with very little trouble. In places, where turf can be easily obtained, many a small farmer, or cottager, might form such pits with advantage. When the turf is thoroughly decayed, it forms most excellent soil for various plants—so that nothing is lost by this practice.

Mr. Beaton, in a late number, described the excellent way in which Mr. Cutbush, of Barnet, cultivates the Holly, one of our handsomest, and certainly the hardiest, of our evergreens. Mr. Yates is equally assiduous in cultivating it. I noticed a very large plot of the common Holly, about two feet high, which had been planted last autumn, in rows two feet and a half wide, and about the same distance from plant to plant. These are intended to form large specimens, before they are sold. To encourage full growth, and a large

bundle of fibres to each plant, a couple of spadeful of good rotten dung had been given to each plant. No doubt the result will answer the most sanguine expectation. When they have been two or three years in their situation, and have made growth accordingly, they will be all lifted and re-planted immediately, and all strong rambling roots pruned in. This desirable method is followed throughout the whole stock of shrubs and trees here—so that there is no fear about their growing, on removal to a distance. There is a large collection of variegated Hollies, of various sizes, which are all treated in this admirable manner. I saw two or three taken up, with bulbs of roots as compact as if they had been turned out of a pot or tub. Near to the plantations of Hollies, there are a large number of all the best Coniferæ. The Deodars were particularly healthy, with branches close to the ground, all planted *thin*, so that each plant had its branches entire, and separate; the moment they touch each other, they are thinned. In a specimen plantation, I noticed some fine trees, from eight to ten feet high. *Cryptomeria Japonica* bears the weather well here; I saw several forming cones, so that there will be an opportunity of raising plants from seeds in this part of the country—a step, in my opinion, in the right direction towards acclimatizing them so as to bear the frosts better. The soil here, however, is a sandy gravel, which, no doubt, causes the wood to ripen early.

I saw a few plants of the true *Juniperus rubrum*, a curious variety, with dark purplish foliage, rendering it, by contrast with the silvery-leaved Deodars, a striking object.

In this soil Rhododendrons thrive remarkably well, and flower abundantly. I noticed a long row, by a brook side, that formed quite a lofty edge, and must, when in flower, be truly splendid.

Turning from ornamental trees and shrubs, my attention was next directed to fruits. A large quarter of Apples and Pears are grown as the Hollies are, on the *thin system*. They are regularly pruned in autumn with the knife, and in summer with the finger and thumb, so that they are well furnished with wood and blossom-buds. This may be called a "nursery orchard;" and as the trees are root-pruned also, each tree is at once, on removal, a bearing tree, without resorting to dwarfing stocks.

In writing about the method of pruning Currants at Worsley Hall, I remarked that the Red Currant bears well, though cut in severely. Mr. Yates practises that way more severely than I ever saw anywhere. Each tree presents a strange appearance—not a twig of young wood to be seen, excepting the leading shoot of each branch, and that is shortened in considerably. A practised eye could detect, at once, the bearing-buds thickly placed all the way up every branch. Summer pruning is resorted to, just before the fruit begins to change colour. I wish every gardener in Great Britain could see these Currant trees just now, I am sure he would adopt this excellent mode of pruning.

Raspberries are grown here in large quantities, and the shoots are very strong. To assist and induce such growth, a good covering of half-rotten dung is given every autumn. It is covered by taking up the central portion of soil between the rows, and spreading it right and left over the dung. No other digging is allowed: hence, as Mr. Errington recommends, surface roots are induced. The canes are tied upright to stakes in the old fashion; but Mr. Yates has promised me to try the arching mode, as practised by my friend Mr. Flintham, at Rotherham, so successfully, and described by me twelve months ago.

Kinds of Apples and Pears.—Every cultivator ought to study what sorts of fruit will be the best to plant in his garden, or he will make a mistake, which it

will take years to correct. Mr. Yates, twenty years ago, made that mistake; he planted many sorts of fruit, which failed: as, for instance, *Beurré Rance* and *Easter Beurré* Pears, *Ribston Pippin* Apples, some Plums, and Cherries. These are nearly all discarded; whilst *Knight's Monarch* Pear is as fine just now as any Pear possibly could be, and also the *Apple Court Pendu Plat*. I tasted the fruit of both, and found it highly flavoured, and very sound.

The subject is, however, too important to be hurried over at the end of an article; and I will, at an early opportunity, return to it more fully.

The Strawberry is, as might be expected, cultivated largely. To procure early crops, the land is thrown up in long ridges, running east and west: hence there is a south bank and a north bank. The former produces early, and the latter late crops—a useful arrangement.

I have now only to notice what I call the ornamental grounds. There is a kind of raised American garden with walks to the summit, and round the sides. There is a frame over this ground, which is covered with canvass when the plants are in flower. This is a cheap mode of protection, and must make a very agreeable promenade at that season.

In another part of the grounds I noticed that rarity now in gardens—a broad, straight, grass walk, bordered on each side with handsomely-formed Pear trees. This is another cool, refreshing walk in summer.

In the front of the house there is a lawn of some extent, on which I noted the fine *Deodar*, alluded to before. It measures twenty-one feet high, and is well furnished with branches to the ground. There is also a *Cryptomeria Japonica*, eighteen feet high. Nearer the house is a young *Araucaria imbricata* that had the misfortune, two years ago, to lose, by accident, its head, or leading shoot. The next side branch, however, was tied upwards, and is now forming a true leading shoot and throwing out horizontal branches. Whoever happens to have a like misfortune with his *Araucaria*, may repair it, of course, by the same means.

I have now exhausted my notes made at this interesting place; and if the reader can pick up any information, or receive any pleasure by reading my imperfect descriptions, or be induced to visit the place, and judge for himself, I shall not think my time and trouble badly bestowed.

T. APPLEBY.

WELLINGTON ROAD NURSERY.

MESSRS. E. G. HENDERSON AND SON.

(Continued from page 394, Vol. XIX.)

Resuming my notes on this nursery, I will next observe that that splendid Orchid we see at the Shows among variegated plants, and called *Aspidistra lucida variegata*, is a flower-garden plant as hardy as a Sweet William. Plant one of them out for two or three years with Broccoli, or Brussels Sprouts, till it is as big as a Giant Rhubarb. Then take it up, pot it in miserably poor soil, and scanty root room, to cause it to turn variegated, and bring it up for a prize like *Farfugium grande*, and nobody need know how you came by such an extraordinary specimen in so short a time.

There is also a variegated *Robinson's Defiance* Verbena being propagated, as fast as it will go; but it would take me a month to tell of all the propagating I had seen that day. *Tritoma uvaria*, the finest autumnal flower-border plant we have, seeded here last autumn, and hundreds of seedlings of it are on their legs already. *Tritoma Roupertii* seems very different from it in looks at present.

Calceolarias and Cinerarias, from seeds, on a moist bottom, in shallow frames, look remarkably well. They are just now in the very best state to pack and travel, and no bother to have them as gay as the Londoners for the Shows, or show-house, and for mixing in the best flower-beds near the house.

I would ten times sooner buy a batch of these seedlings in spring, and risk them for finer, than have seedlings of my own from bought seeds, after losing one-half of them by fogging off, and buy the other half "through the nose" in consequence. But I must mention one named *Cineraria*, of which they grow enormous quantities, on account of its close bushy habit, and for its very striking blooms, which have a deep pink edge, a white bottom, and purple eye.

A new *Aucuba*, from Japan, as hardy as *Aucuba Japonica*, with as large, if not larger, leaves, and all the leaves as dark green as those of the Portugal Laurel. This will make a splendid addition to our hardy evergreens. It was got over by Dr. Sichelst, who has an experimental garden at Bonn, on the Rhine.

A new *Rondeletia*, from China—perhaps the free-flowering kind; but is very different from *Rondeletia Championi*, having leaves more like a Portugal Laurel on long footstalks, and with the underside as glaucous as the leaves of *Magnolia glauca*.

A new *Conoclinium*, with leaves more like those of *Gesnera zebrina*. *Gardenia citriodora*, having the growth like *Burchellia Capensis*, and flowering in clusters at the joints of last year's wood, pure white, and as wide as a shilling. A most valuable acquisition to our sweet-smelling plants. Blue *Allamanda* is here also; but I must keep from the stove till I get through the flower garden and fancy work.

They do the bedding and all the Geraniums remarkably well; but they do not grow them into specimens. They say that one, called *Culford Beauty*, is the best bloomer, and the best or highest coloured blossoms of all the variegated tribe; and there is a coloured figure of it in the first number of their "Illustrated Bouquet," by Mr. Andrews, which fully backs up this high commendation. Another, called *Royal Standard*, has a very good orange-scarlet flower, and a golden-chain leaf, but larger. *Fontainebleau* is a new colour, and a new leaf in the variegated class, a golden-chain edge, with a purplish-scarlet ring between the yellow outside and green centre of the leaf; a cerise bloomer, and a fourth belongs to the fancy-leaved kinds. It is the highest yet from the *Queen of May* leaf, and a good truss. *Lady of Loreto*, *Hotel de Cluny*, and *Lady Dorothy Neville*, are all in the new style of marking, or fancy leaves; and the crowning pillar of the season is to be called *Hendersonii*, which looks at present like *Flower of the Day*. It was proved in a private flower garden last year; but the name *Hendersonii*, among so many competitors, is the best proof of its merits. *Cardinal de Richelieu*, in the way of *Diadematum carminatum*, or shaded crimson, they say, is the best bedder of all the greenhouse class. Can any one inform our readers what the *Crimson King* did last year in the way of bedding? It was a bad name: there was no crimson about it; but it made a fine pot plant with me. To make a flower crimson, you must suppose the finest military scarlet coat, or cloak, to be mixed in the dyeing, with full one-third of Bishop's purple. There is crimson and deep and light crimsons before we come to scarlet. *Tom Thumb* has one-fifth crimson in the scarlet.

Acacia Drummondii microphylla is another new form of *Acacia*, which they consider the best after the species. *Acacia longifolia magnifica* was profusely in bloom in several of the houses; it is still imported from abroad, where it is increased from layers. The back wall of the winter garden is planted with the best kinds of *Acacia* and *Camellias* alternately. Here are the best specimen plants on the establishment; the largest of them is a splendid *Rhododendron*, ten to twelve feet high, and ten feet in diameter, it is full of bloom-buds, it is one of Russel's early crosses, a dark crimson, and named *Chandlerii*, after Mr. Chandler, of Vauxhall. The next largest, is a sweet Bay standard, that would match the *Rhododendron*. Here, the new Bhotan *Rhododendron Jenkinsi* is seven feet high, and coming into fine bloom for the second time in Europe; the plant has eleven large flower-buds, and, as it is said to be the best of that breed, many will go on purpose to see it. Fine specimens of *Araucarias*. *Chamaecyparis thurifera*, selling off like "wild fire." This was the Conifer which was balloted for at the Horticultural Society. *Cupressus Lawsoni*, *McNabiana*, and *Bregeoni*, *Thuja gigantea* (Low), and ditto (Veitch), the two appear to be quite distinct. *Thuiopsis borealis*, *Podocarpus nubigena*, *Pinus Bungeana*, and many others; *Picea bracteata*, and lots of "fly flappers," or real standards

of *Deutzia gracilis*, from three to five feet high in the stem. Everything is eagerly made into standards now, and get a ready sale; this winter house is half full of standards of all kinds, and there is a most valuable sort of fountain Cactus, of the Mallisoni section. I recommend this Cactus to the whole world, and I never saw or heard of it before. It is the work of some amateur, the kind is called *Seotica*. The old plant is trained up round a pillar to a height of seven feet, just like a Pillar Rose, then the shoots fall down fountain fashion to the ground; but they might be made into a tent, or arbour, or to any shape, as they are pliable as cord. One Camellia, called *Colletti*, has a whole petal, white here and there, in a red flower; many of the best American, and continental newest kinds, were in, or coming into bloom, and several of those just received from China will bloom this spring. Large old plants of Cobæas, Passion Flowers, and other climbers for London conservatories, are kept in pots in the winter garden, and *Lapageria rosea*, and *alba*, for first-rate climbers anywhere; also, *Hardenbergia Makoyana*, violet-blue; *Passiflora Imperatrice Josephine*, white outside, and rosy centre, and sweet scented; *Rhodochiton volubile*, which was nearly lost; *Teeoma fulva*, and *spectabilis*, all first-rate greenhouse climbers not much known; *Stypandra frutescens*, a most delicate-looking Lilywort, with the looks and habits of a shrubby plant, and tassels of pale blue flowers, much like a *Sollya*. I think it would make a fine pillar, or against a pillar plant in a conservatory; *Valotta miniata*, flowering all the year round, and seeding most freely, and one seed only in a pod; it is a new genus, in a new section of *Amaryllis*. *Veronica deussata Devoniana*, a new hybrid, with large heads of white flowers, which ought to be quite hardy as *deussata*, lives out the winter at Inverness. I never knew it killed by the hardest frost. *Veronica meldeneso*, rosy-white; and *V. verschaffelti*, the next best and newest; *Salvia Ræmeriana*, dark scarlet, and distinct; and *Soucheletii*, a dwarf variety of *splendens*. *Phlox Drummondii*, Lord John Russell, Lady John Russell, and old General Radetzky, the three best; and *Phlox depressa eritron*, another fine striped kind; *Myrtus*, or *Eugenia verticillata*, a fine looking thing; *Leucopogon angustifolium*, white, Epacris like, blooms fine; *Lantana* (new) *lutea*, *kermesina*, *Marquis de Seporta*, *Angele*, *Boul de Neige*, *Doris*, *Feloni*, *Crocea superba*, *L'Abbe Touvene*, and *Wilhelm Schüle*, are all said to be downright good, and will do out against a greenhouse front during summer.

The best of the new *Heliotropiums* are *Miss Nightingale*, *Jean Mesmer*, and *General Val Hubert*; the best *Acacias*, *Drummondii*, and *Acacia D. microphylla*, *longifolia magnifica* (both best), *grandis*, *oleifolia elegans*, *oxycedrus*, *pubescens*, *dealbata* (a slight remove from *affinis*), *platyptera*, and *coccinea*, with a "rosy purple" flower.

Chætogastra Lindeniana, deep crimson Pleroma-looking flowers. This was first spoiled with stove heat, just like *Pleroma elegans*. *Blandfordia flammula*, a splendid old plant; *Calyptraria hæmantha*, "the noblest of the order," is as hardy as Pleroma, and requires the same treatment. This, also, has been murdered in the stove here, and on the Continent. *Calyptraria* means a nightcap, a loose hood over the flower-bud; *hæmantha* is blood colour, but call it the dark purple nightcap plant, and give it the treatment of an Epacris, and it will beat *Medinilla magnifica* to pieces, but with an upright and more glorious spike. *Correa cardinale* has also been murdered by bad cultivation—it is a beautiful grower when well done from the beginning—here it is splendid; *brilliant* is next best; then *ventricosa* and *picta superba*. *Daphne indica rubra*, a whole bank of them from cuttings. *Hedera tulipifera*, and *maerostygia*; *Leptodactylon Californicum*, a miffy plant to keep on old stems over the winter, but autumn cuttings kept in stove pots over the winter, with a little loose sand on the top, keep well, as stated also in the Highgate Nursery; and Mr. Foggo says they bed it out at Shrubland Park near the Swiss Cottage, where it looks most charming, but there is no end to the beautiful and best things for a greenhouse. Let us try the herbaceous borders, and here is *Pyrethrum Duchess de Brabant*, which is nearly scarlet; *Pentstemon Ludovick*, *Lemoniana*, *insignis*, *Azureum*, and *Arthur*, all of them of the best. The yellow Violet, or *Viola pyrolæfolia*, is a pretty thing after all; the best of the Delphiniums are *formosum*, *Hendersonii*, *Queen of England*, *La Belle Alliance*, and *delicatum*. The new scarlet *cardinale*

goes to sleep a few weeks after planting out, and ninety-nine out of one hundred of them never wake again. It has been crossed, however, with some of the blues, by one of my friends, and the seedlings promise well. *Cerastium tomentosum*, the white hardy edging plant at the Crystal Palace; *Dianthus albo nigricans*, is said to be very good indeed; *Dodecatheon elegans* and *integrifolia*, two of our best spring flowers from Canada.

The best shrubby Calceolarias for bedding, *Orange Perfection*, *Aurea floribunda*, *Admiration*, *Orange Boven*, *Ethel Neweome*, *Golden Chain*, *Wellington Hero*, *Rosy Morn*, and *Monticelli*, which is a bold crimson, with a yellow hood, and was raised by Mr. Sanders, of Tedworth. And what is most gratifying to know, "the best selection of uniform merit yet offered" by this firm, is a collection of Verbenas from an intimate friend of mine, in Suffolk, Mr. Breeze, Denton Lodge, near Harleston. I have not seen any of these flowers myself, but I know the lady who judged them, and I also know Mr. Breeze; both are first-rate judges, and very jealous of their skill. There are fifteen kinds in this collection, and anyone can get the best of such colour as he likes, by mentioning that colour, and Mr. Breeze's collection.—D. BEATON.

TREES FOR SHELTER ON THE NORTH COAST.

I HAVE an unsheltered garden on the north-west coast of France, and have had some experience in sea-side planting. My garden is situated on the top of a sand bank, whose base is washed by the high tides, and is exposed to all the furies of the north and north-west winds.

My first attempt at a screen was with the Scotch Fir, but the wind soon cut my young trees to pieces; the *Pinus maritima*, which flourishes on the coast near Bordeaux, was equally unsuccessful. I tried a number of other trees (although not the Sycamore), but they invariably died, after a short exposure. I have now, however, a hedge of great beauty, and which gives me a screen that enables me to grow anything not higher than itself; it is the *Tamarix Gallica*. Planted from stout cuttings either in the autumn or spring, it throws out long shoots the first year, and, at the end of two or three years, forms a very good hedge. During the whole of the summer it is a beautiful object, owing to its light feathery foliage, and it flowers twice during the year. The stronger the wind, and the more exposed its position, the better it seems to grow; in fact, the sea breeze is essential to its well-being. I have tried it inland, with but very poor success. It grows very rapidly; I have now a hedge of eight or nine feet high, grown from cuttings planted in 1853. I find the *Acacia* and *Elder tree* grow well, if not immediately exposed to the blast.—TH. PILTER, *St. Germain de Livet, Lisieux*.

[The *Tamarix* succeeds, also, on the coast of the Isle of Wight, but it is very doubtful if this tree would bear the severity of our north coasts.—ED. C. G.]

THERE is no tree, or shrub, that stands the sea breeze better, or makes a closer fence, than the Tamarisk (*Tamarix Gallica*). It always keeps its beautiful green foliage, and forms an admirable shelter for tender plants. By throwing up a turf bank between it and the sea, and planting the Tamarisk pretty closely inside it, a most effectual shelter is obtained against these blasts from Neptune, which would soon kill Flora's offspring.—GLADIOLUS.

IN the first place, we would apply to some nurseryman for large Hornbeams, six feet to seven feet in height; plant them as the first break; fasten them well, of course; then take all their leading branches off, and cut the side ones into eight or ten inches on each side. By clipping the sides, you thicken the fence. Allow it to grow one foot higher every year. Then plant a good row of large Sycamores, three feet from the fence; before the trees get too large, you will be able to have a good fence up; then three feet from the trees we would plant a fence of Thorns and Beeches of equal strength. We would plant as large Thorns as we could buy, and put seven Thorns in one yard, and three Beeches; or, in the whole fence together, put four Thorns and one Beech, and so on, until

finished; and, as the fence grows, you will find you have not been misled. Allow the Beeches to spread sideways as much as they will, and they will interweave themselves with the Thorns; they keep their leaves on until the worst of the weather is over, and will afford much shelter to the Thorns. By the time the Thorns begin to grow, the Beeches will throw off their leaves, in order to make another coat for the following winter. After this you can follow on with flowering shrubs and evergreens, herbaceous and bedding plants, and so on. If you think the single row of Sycamores is not enough betwixt the two fences, plant a row of Beeches next to the inner fence, alternately with the Sycamores.—F. V.

My situation is much like that of your correspondent's friend. My house "is on a high and exposed situation, open to all the winds of heaven," but on the western, instead of the eastern coast; a circumstance not a little, I imagine, in my favour. I am also rather further from the sea, and not without some shelter of old trees. But, what I principally mean to refer to at present, is a plantation of a few acres, which I made on a steep bank and gully facing the shore, about 300 yards distant from it, a sandy flat intervening.

When I set about planting this, a dozen years ago, I began by putting in along the low seaward side, where there was a rough Hawthorn hedge, a row of Alders and Willows to form a *brise-vent* for the trees behind them. If I had it to do again, I think I should add, or substitute, *Elder*, and *Birch*. The *Elder* thrives nearer the salt water than any other tree, or shrub, and grows readily and quickly from cuttings. The *Birch* is very hardy, and makes a close screen. However, my Willows and Alders answered the purpose.

Behind them, I planted some of all the common trees to be found in an ordinary nursery.

It would not have answered as a profitable investment, for I have planted and re-planted, grubbed and re-grubbed (to keep down Furze and Briars), but as my operation was on a scale that made the expense not very important, I resolved to succeed, and I have succeeded, to a considerable extent.

At the present writing, the different kinds, in the order of their progress, stand thus. Ash, and Sycamore, Wych-Elm, Turkey (mossy-cup) Oak, which is decidedly hardier, as well as faster-growing, than the common Oaks. After these, the progress seems to be more dependent upon casual differences of soil and exposure, than upon the kind of tree. The Norway Maple, somewhat akin to the Sycamore, has one great advantage over it—in shedding its leaves of a rich yellow, instead of the crumpled, burned-looking brown of the Sycamore, which is a positive deformity.

As to the Conifers, this is not a Fir country, but I strongly recommend the *Black Austrian*, which seems to be as indifferent to "December's snow and July's pride," as *William of Delorraine*, and it seems to grow where anything else would die of hunger. *Pinaster* is also very hardy, but it does not take fast hold of the ground, and is blown down.—SENEX.

NOTES FROM THE CONTINENT.—No. 21.

CHARLOTTENBURG.

THE marriage of the Princess Royal will have familiarised the readers of the English newspapers with the names of two of the palaces, in the neighbourhood of Berlin; I refer to Bellevue and Charlottenburg, and it may be expected that I should state what there is of horticultural interest belonging to them. It is not much that can be said in favour of either. The only feature of note about the first-named is, that it is one of the few places where Pine Apples are grown here; but they are remarkably poor. The plants are scarcely larger than ordinary suckers, and the largest ripe fruit I saw there, in summer, could not have weighed more than 1½ lb.

With a liberal outlay, the royal gardens at Charlottenburg might be rendered really beautiful; though the soil is sandy, and the surface too flat, the requisites in the way of fine old timber trees, and a large expanse of water, are present, and could easily be turned to good account. But truth compels me to say, that the most unmistakable signs of neglect are everywhere apparent. The palace was built by Frederick the Great, who also, it will be recollected, married an English

Princess, Sophia Charlotte, the daughter of George the First. The flower garden, which occupies the square, on three sides of which the palace is built, is laid out in a complicated geometrical design; but from its being badly planted, coupled with the excessive heat of the past season, it at no time looked well. Here, too, during the summer months, the magnificent Orange trees were arranged. No royal garden is thought complete without its collection of standard Oranges, though, as in this case, they usually look yellow and unhealthy. At the back of the palace the grounds, flanked by the river Spree, are laid out in the English style of landscape gardening, and have a tolerably good effect. These grounds are thrown open to the public, and are much frequented, particularly on Sundays, at which time hundreds of persons may be seen feeding the tame, and enormously large, carp, which abound in a fine artificial lake. This sheet of water might, with very little trouble or expense, be made a most beautiful feature of the grounds. The banks and shallow parts are covered with a tall, elegant kind of reed (*Phragmites communis*). The stems of this plant, being straight, light, and strong, are used for the making of an effectual kind of shading for frames and houses. They are laid side by side, and, being connected with two or three parallel strings, may be rolled or unrolled easily.

In one part of the grounds is a fine avenue of the sombre Scotch Pine, which terminates in a circle of the same kind of trees, 150 feet in diameter. In the centre of this circle—surrounded by Weeping Willows, beneath which, in summer, bloom the white Lily and belts of the Forget-me-not—is a beautiful Doric mausoleum, erected to the memory of the late Queen Louisa.

A walk at right angles to this leads to where a fine tree of the Norfolk Island Pine (*Araucaria excelsa*) is planted out. It is at least five-and-thirty feet high, and is now covered with a conical structure of glass and wood, to protect it from the frost. A furnace is erected, and a flue carried round it; and, to economise space, there are at intervals shelves, one above another, on which scarlet Geraniums and Fuchsias are stored for the winter.

I found the kitchen garden in a still more neglected state than the other parts of the ground. This soil was literally covered with rank weeds, far over-topping the crops which were buried beneath them. There is not a sufficient number of men employed to keep the place clean.

It is greatly to be hoped that the Princess will be in Prussia as great a patron of horticulture as her royal parents are in England, and that she will give to gardening that support which, since the death of the late King, it has not here received.—KARL.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE March Meeting of the ENTOMOLOGICAL SOCIETY, held on the 1st ult., was very fully attended; the new President, Dr. I. E. Gray, F.R.S., of the British Museum, being in the chair. Mr. F. Smith exhibited a number of insects, of all orders, just received from Mr. Foxcroft, being the first instalment of his collections at Sierra Leone, where he has recently arrived on an entomological excursion. The Lepidoptera were very numerous, and in excellent preservation. They had been taken in the gardens at Freetown. He had also sent a great quantity of specimens of the Driver Ant (*Anomma Burmisteri*), the habits of which had been described by Dr. Savage, the American missionary, who had observed it at Cape Palmas. Amongst these Ants, Mr. Smith had discovered a new Myrmecophilous Beetle, belonging to the family *Staphylinidae*, and apparently to the genus *Myrmedonia*, remarkable for the long bristles at the extremity of the body. Mr. F. Smith also exhibited and described a number of very interesting nests of different kinds of *Hymenopterous* insects, collected at Port Natal by M. Guenzius. The nests of *Eumenes tinctoria* are composed of cells made of mud, and in these a parasite of the genus *Stilbum*, belonging to the family *Chrysidiidae*, contrives to introduce her eggs. The nest of *Synagris calyda* is formed of fresh clay fixed on doors, with a store of the caterpillars of *Noctuae*, collected from fissures in the bark of trees. The *Pelopæus chalybæus* forms its cells in hollow tubes of bamboo under the verandahs of houses, storing them with spiders as food for the young larvæ when hatched, and separating the cells from each other with layers

of the white excrement of different birds. A species of *Anthophora* builds its nests in the holes of walls of houses, which are infested by a parasite of the genus *Crocisa*. A large species of *Pompilus* provisions its cell with large hairy spiders; and a *Xylocopa* builds its cells in dead branches, roots, &c., which it excavates for that purpose.

Mr. Samuel Stevens exhibited a number of very beautiful insects, collected recently by Mr. Wallace in the Aru Islands, near New Guinea. Amongst them were some of the finest Longicorn Beetles ever discovered; also both sexes of an *Ornithoptera*, allied to *Priamus*, together with its chrysalis; also a green species of Wasp, described by Mr. Smith.

Mr. Westwood exhibited a small Moth, allied to the common Acorn Tortrix of this country, which had been hatched from the curious jumping seeds that had been sent from Mexico, and had created so much interest, both in this country and in France, where, as appeared by an article recently published in the *Journal des Debats*, it was supposed that the inclosed larvæ (whose motions cause the leaps to be

effected) were those of some Coleopterous insect. He also exhibited the larva of the curious genus *Drilus*, allied to the Glowworm, which had also created considerable interest in France, where it had been mistaken for a separate genus, and had been named *Cochleotonus* by M. Mielzinsky. It feeds upon the common *Helix*. Also specimens of the curious blind Beetle *Leptodirus Hohenwartii*, collected in the Proteus caves of Styria by Sydney Saunders, Esq., her Majesty's Consul in Alabama, in December last; together with a considerable number of blind insects of other orders.

Mr. Stainton read a notice of a species of Moth belonging to the family *Geometridæ*, which feeds in the larva state on dried plants, and has thence been named *Acidalia herbariata*, a specimen of which had been taken by Mr. Hunter, in a garden in Bloomsbury Street, London.

Mr. Samuel Stevens exhibited a new substitute for cork, to be used in lining the drawers of insect cabinets, namely, inodorous felt, an article much cheaper than ordinary cork, not costing more than a penny a square foot.

NEMOPHILA MACULATA.

RAISED from Californian seeds sent home by Mr. Hartweg.

This is the best annual yet raised from Mr. Hartweg's seeds. With the habit of *N. insignis*, it has whitish flowers, distinguished by a deep violet blotch on the end of each lobe of the corolla. It varies, however, much in their colour, the dots being sometimes faint, ill defined, and run; the veins, too, of the corolla are often of a pale blue, which interferes much with the gay effect of the blossoms. It will, therefore, require to have its seeds saved from carefully selected plants. Mr. Hartweg called it *N. speciosa*, a very objectionable name, for which Mr. Bentham has substituted *maculata*.

It requires exactly the same treatment as *N. insignis*.—(*Horticultural Society's Journal*.)

FLORISTS' FLOWERS.

THE VERBENA.

THOSE intended for exhibition in pots, should now have their last shift. Choose such for this purpose as are well furnished with shoots down to the soil. To make them still more bushy, take off the highest tops, and, as it is now a good time for propagation, every one of these tops will make an excellent cutting. If the amateur or gardener chooses to try Mr. Kidd's method of striking them in sand and water, as mentioned by Mr. Beaton lately, he may do so; but, I think the better way is the old fashioned one of putting them in pots with an inch of silver sand upon soil well drained, for if cuttings are left in sand and water a day too long, the roots will certainly perish. In a nursery, where everything goes on like clockwork, such delicate practices may be carried out with impunity.

In potting for exhibition, the size of the pots ought to be considered carefully. The best mode of training them, is on a circular wire trellis, placed horizontally, that is flat; and these trellises should not exceed a foot, or at the most, fourteen inches in diameter. They should have three or four strong wire feet to be pushed into the soil, so as to bear up the shoots about two inches above the rims of the pots. Any wire-worker, with proper instructions and diameter given him, would easily make such trellises at a trifling cost. The size of the pots intended to be used for this purpose, should be given to him also, so that he might fix the feet to the trellises, that they would enter the soil an inch within the rim of each pot. Eight inches diameter will be quite large enough for each pot, but if that exact size cannot be obtained, half an inch to an inch wider may be allowed. To bring out high colours, use a rather rich compost, formed of sandy peat and



Nemophila maculata.

turfy loam, in equal parts. To enrich this compost, procure some cakes of cowdung from a pasture, dry it moderately, and then rub it into pieces, and mix it with the peat and loam, in about a proportion of one-eighth. Drain well, and pot moderately firm. When they are potted, place them in a cold frame, covered up at night to protect them from frosts. During fine weather, and when gentle warm rains are falling, draw off the lights entirely, but keep the lights on in heavy rains, and blazing sunshine, shading them when the latter state of the weather prevails. As the shoots rise, guide them through the meshes of the trellis, and tie them down to it, extending them every way till the trellis is completely covered. When the pots are filled with roots, give the plants a watering now and then, say every third time with weak liquid manure. The green fly, red spider, and, if wet weather prevails, the mildew, will make their appearance; the first is easily got rid off with

tobacco smoke, and both the others with sulphur dusted over the leaves. To make sure of a good blaze of bloom, do not allow any buds to open till about five or six weeks before the exhibition day. It will require care and skill so to arrange the shoots, that every part of the trellis may be furnished with blooms.

The following are the best varieties to bloom in pots :—

Amandine Luther, blush white, crimson eye.
Prince of Wales, ruby crimson, lemon eye.
Sir Joseph Paxton, light rosy-crimson ; very fine.
Crimson King, decidedly the best crimson.
Emperor, shaded rose, with very large dark centre.
General Simpson, pale carmine ; fine form.
Géant des Batailles, rich crimson, darker centre ; fine.
Reine des Amazons, blush white, deep rose centre.
Glorie de France, salmon pink ; beautiful and novel.
King of Roses, pale rose ; delicately beautiful.
Mrs. Turner, lilac white, with lavender centre.
Mrs. Halford, the best white out.
Standard Bearer, blue purple, with large white centre.
Syrian Prince, rich purple.
Noel, bright violet, with dark centre.
Cupid, pale rosy-purple, with a striking large white centre.

FINE BEDDING VERBENAS FOR 1858.

Rosy Gem, the best rose colour, with a dwarf close habit.
Evening Star, pale orange red, large yellow eye, excellent habit ; one of the best in cultivation.
Prince of Oude, deep rich purple, close habit ; very good.
Cardinalis, intense scarlet, and of a close creeping habit.
Miss Trotter, deep scarlet, old *Melindris* habit ; continuing very late in bloom.
Celestina, light blue, small white eye ; very beautiful.
 These six varieties ought to be immediately procured, by everybody that has a large extent of bedding-out to do this season.—T. APPLEBY.

CUSCUTA ? CALIFORNICA.

RAISED from seeds received from Mr. Hartweg, and said to be collected in fields near Sonoma in California.



This little parasite clings by its delicate thready stems to any branch or leaf within its reach. Its minute flowers are at first in close heads, but as it grows older they separate, and eventually form short loose racemes ; their colour is white, and their smell very agreeable. Although Professor Choisy regards it as a true Dodder, it probably ought to constitute a new genus ; for it has but one style, the peculiar scales within the corolla of the genuine Cuscutas are deficient, and the upper

part of the flower-stalk is fleshy and transparent. In the accompanying cut, 1 represents a flower magnified ; 2, a corolla laid open ; 3, a pistil ; and 4, a cross section of the ovary.

The seeds should be sown along with those of some soft-stemmed annual in pots ; and when strong enough, and before it destroys the annual plant which it first grew upon, some soft-wooded shrub, such as *Lotus Jacobæa*, or *Pelargonium*, should be brought within its reach ; it will soon adhere and grow freely upon it.

It is a free-blooming little parasite, more curious than ornamental.—(*Horticultural Society's Journal*.)

NEW AND RARE PLANTS.

GESNERA CINNABARINA (*Vermillion-flowered Gesnera*).

This has also been called a *Nægelia*. It is a native of the Chiapos Forests, in Guatemala. It was discovered there by Ghiesbreeht.—(*Botanical Magazine*, t. 5036.)

DENDROBIUM PULCHELLUM (*Showy Dendrobium*).

Purplish-lilac flowered. It is a native of the forest of the Silhet Hills, in India.—(*Ibid.* t. 5037.)

HYDRANGÆA CYANEMA (*Purple-stamened Hydrangea*).

Discovered by Mr. Booth, in Bhotan. Imperfect flowers, white.—(*Ibid.* t. 5038.)

CATTLEYA ACLANDIÆ (*Lady Acland's Cattleya*).

Introduced by the late Lady Acland from Brazil. Flowers in April ; yellow green, richly blotched with dark purple.—(*Ibid.* t. 5039.)

EUGENIA LUMA (*Pointed-leaved Eugenia*).

Introduced by Messrs. Veitch, from the colder parts of Chili, whence it was sent by their collector, Mr. W. Lobb. It is a hardy, beautiful shrub, with white flowers in profusion. Blooms in June, July, and August.—(*Ibid.* t. 5040.)

DASYLIRIUM GLAUCOPHYLLUM (*Glaucous-leaved Dasy-lirium*).

Sent to Kew Gardens from Real del Monte, by Mr. Repper.—(*Ibid.* t. 5041.)

QUERIES AND ANSWERS.

CHRISTMAS ROSE CULTURE.

"Can you help me in regard to the cultivation of the Christmas Rose? I have petted three plants for the last three years ; that is, allowed them sole possession of a very nice piece of ground, keeping all other plants from overrunning them. This winter I had *five blooms* on the three plants, and those of a dingy lilac colour, anything but ornamental. When in Devonshire, at Christmas, I saw in a friend's garden a really beautiful mass of these flowers, as white as Snowdrops. Can you tell the secret?"—KATE.

[Time and perfect repose are the only two elements essential to the perfect development of the Christmas Rose, in any common garden soil. Young plants of it, and, more especially, if recently divided, seldom give the true colour, or much flower. A Christmas Rose twenty-five years old is still a very young plant. If your soil is light, water it in April and May. The great defect in the cultivation of the Christmas Rose, is dividing the root in the autumn, and transplanting the plant in winter, when in bloom, or soon after. It should never be touched but during the last half of June.]

VIOLET CULTURE.

"Will you oblige me with some information respecting the management of double Violets? Mine have become scraggy, woody plants, with little promise of either foliage or flowers. They were, three years ago, most luxuriant, blooming abundantly. They stand on a cool border."—A SUBSCRIBER.

[You allow your Violets to starve ; that is all that is the matter with them. Make a right bed for a fresh set of plants,

not runners from your own stock, for that would only bother you ten times worse. Make it generous, such as would give a good crop of Cauliflowers; then mulch the surface with any very rotten refuse about the garden, and water well in the summer. If you tell any garden workman to make up a piece of border that would grow Cauliflowers, he will understand you, and when it is ready change your mind, and plant Violets; but first tell him you want a Violet bed, and he will be either puzzled how to do it, or think you daft for supposing that Violets require any fuss about them.]

VARIEGATED GERANIUM FOR BEDDING.

"Can you recommend a good variegated Geranium for bedding? *Flower of the Day* is too stunted in its growth to be planted with almost anything else, except as a bordering."—R. F. S.

[Where the *Flower of the Day* is too slow of growth, *Jackson's Variegated Nosegay* will just be in its right place, and *Flower of the Day* would make a good edging to it, if an edging is necessary. Therefore, it stands to reason, that where the *Flower of the Day* grows vigorously, as it does in most gardens, the bed for *Jackson's Nosegay* should be made on purpose to check luxuriant growth, and encourage an abundant bloom. It is by far the best grower of all the variegated Geraniums, and it is as cheap, we believe, as *Flower of the Day*.]

THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.

By P. V. M. F.

SECTION I.

THE PROFIT OF KEEPING BEES.—My good friend, you keep, or you intend to keep, bees: it is well; for, if you manage them properly, they ought to pay your rent, if you are a day-labourer. I don't mean to say they will pay your rent *every* year, but, taking one year with another, they ought, at the very least, to bring in from £5 to £7 a year; and they may be made, with attention, much more profitable. Do not think I speak without reason, for I can tell you that not a few cottagers in England *do* pay their rent—aye, and in some places, but not often in England, I have heard of persons who live comfortably on nothing else but what they get for their honey. You have heard talk of Poland, I dare say; well, *there* it is quite a common thing to see a hundred, or two hundred hives, and even a great many more, kept by one person. But, in England too, I have heard of as many as *sixty*, or more, hives being kept by one man. I have myself seen as many as twenty hives in a garden. Perhaps you may think twenty hives a large number: if you were a neighbour of mine I should not wonder at it; for, where I have lived, for many miles on either side, the poor people everywhere destroy so many of their hives every year, that I never knew above four kept in one garden over any one winter. It does not matter how many swarms there may have been from these four stocks in any summer, as soon as autumn comes all but the old number are taken up and plundered. Now, of course, I do not mean to say that a cottager, who keeps only *four* hives, will be able to pay his rent generally. To do this a good many more should be kept. *Every cottager should keep at least ten stock hives over every winter.* And why should he not? Perhaps you will say, "I must have money; I can't wait so many years as it would take to get up my number to ten, without some profit out of my bees." Well, as it would take three or four years for you to get any profit, if you began with only one hive, I do not ask you to wait so long before you begin to take up some of your hives. All I want of you is to let them gradually increase from year to year; and to be content, for a few years, with a *part* only of the plunder you might have. Add only *one* to your number every year, and you will still get a fair share of honey, a share that will increase every year, until you have got as many as you can look after.

HOW TO BEGIN BEE-KEEPING.—It is very well to begin with a swarm: if you can begin with more than one, so much

the better. Only let every swarm you begin with be *early* and *strong*. It ought, if possible, to be a May swarm, and certainly not later than the 10th of June, to do any good the first year. *If you can, when you buy, try to get a swarm from a hive which sent out a swarm the year before.* This is very good advice, because such a swarm *always* has a young and good queen, or mother-bee. *Let it also be a first or prime swarm.* It is of little use to buy a cast, or second swarm, much less to buy a colt, or third swarm, which generally come too late in the season, and are too weak in bees to promise much. If the swarm comes early—say in May—put it into a large hive, that will hold a bushel of wheat. If it comes in June, put it into a smaller hive. "EARLY SWARMS IN LARGE HIVES: LATE SWARMS IN SMALL HIVES." Mind you attend to this rule.

OF IMPROVED BEE-HIVES, AND THEIR USE.—The successful management of bees may be carried on in hives of any shape, either of wood or straw. For myself, I prefer *straw* for hives which are to stand in the open air; they are warmer in winter, and cooler in summer, and they are also cheaper than any others. The common bell-shaped hive, well made, is a very good bee-hive. At the same time, for those who like something better than the common hive, and can afford to pay a little more for it, I recommend a straw hive, straight at the sides, and open at both ends, but an inch or so wider at the top than at the bottom. This hive will thus resemble a common bucket, with its bottom knocked out. In fact, a small bucket would make a very good bee-hive; but, being of wood, it would not stand well in the sun, unless a coil of rope, or straw, were tightly twisted round it from top to bottom. It would then make the best and most lasting bee-hive in the world. A small barrel sawn in two, with its ends open, would answer the same purpose. The rope should be well painted, to preserve it. This hive is to be set on the hive-stand with its *broadest end uppermost*, and it must be covered at top with a stout, flat board, projecting a little all round the hive, and resting upon it in such a manner that the bees cannot find a crevice by which to escape. At the same time I do not fasten this top to the hive, as the bees very soon fasten it down themselves. It is well, however, to place a flat stone, or thick slate, upon it, or a few bricks, to prevent it from curling or warping, and the whole should be covered over with a large earthenware pan. The top board must have a large three-inch hole in the centre, which is ordinarily to be stopped up with a bung or cork. If this hive is made of straw, it is a good plan to work it on a hoop of stout wood at both ends, which will preserve the straw much longer, and make the hive sit well on the stand, and the wooden board on its top.

The use of this hive is great; for, in the first place, it is very convenient for putting small hives on in the honey season. But its advantage will chiefly appear in the end of summer, at the time of the honey harvest. One of the greatest objections to the common hive is the absolute impossibility of taking away the honey, without destroying a quantity of comb, that would be of value to the bees another year; much more valuable than the wax, to be got from them, would be to the bee-master. Not only so, there is often an immense quantity of *brood*, or young unhatched bees, destroyed, which, if preserved, and added to one of the keeping hives, would add greatly to its prosperity another year, as these young bees will live till spring. Now, my hive is intended to remedy both these evils, for (after getting rid of the old bees) you may remove the top brood by passing a knife completely under it all round, so as to separate the combs from it; then the comb which contains the honey can be easily cut out, *without injuring the lower part of the combs at all*, especially if there are sticks in the middle of the hive to support the combs. Therefore, be sure to put sticks in these hives. Every one knows that the *best honey* is always stored by the bees in the *upper* part of the hive; while the queen lays her eggs in the middle and *lower* part of the combs. A good bee keeper, therefore, will carefully preserve these combs, and the young bees in them; and this is easy enough with these hives for after the best part of the honey has been taken out, all that is to be done is to set the hive *bottom upwards* under any of the hives that are to stand the winter. The bees of this hive will go down and hatch out the young bees, and carry up into their own hive any honey that may be left. They will thu

be strengthened in two ways—first, by an addition to their numbers; secondly, by an addition to their riches. They will also clean out the comb that was left in the plundered hive, which, after three weeks, should be put by, hive and all, just as it is, in some dry place till the following spring. It is plain that if the early swarms next year are put into these hives, the bees will only have half the trouble of comb-making, and they will soon fill up the vacant space with beautiful new comb. If, however, the combs in the plundered hives are black and old, it would be unwise to keep them.

I must here caution the reader not to forget to place several sticks *in these hives*. There should be three or four of them placed cross-wise for the purpose of supporting the combs. Place them from six to seven inches below the roof of the hive. And be sure to use a sharp knife in cutting out the honey.

(To be continued.)

WARDER'S HIVES AND RICHARDSON'S BOOK.

WE find that Mr. Tegetmeier, at page 234, Vol. XIX., makes some rather severe remarks on our previous paper on Warder's hives, page 52. He says: "From circumstances he appears to have misunderstood the greater part of my previous article on Warder's method, and therefore (I believe quite unintentionally) misrepresents me to a serious extent." On referring to our paper, we cannot find, except in one instance, where we are wrong; and that is in what we said respecting Mr. Golding; and we consider that Mr. Tegetmeier is partly to blame for our mistake, by his use of parentheses, which good writers avoid. These are his at page 412:—"Driving, which bee-masters such as Mr. Golding and others employ at the present day, (leaving sulphur stinks and stupefaction to bee-keepers who are *not* bee-masters) is correctly described," meaning by Warder. We knew no reason why *driving* should be applied in particular to any of Mr. Golding's plans, and having seen his name spoken of rather lightly by a writer in these pages, we were jealous for his reputation, and having misunderstood the above, were led to think that Mr. Tegetmeier included that good apiarian amongst those whom he called "not bee-masters." We regret the mistake, and trust that our explanation will be found satisfactory.

With regard to the "collateral plan is most unsatisfactory." We merely said that some apiarians not of *yesterday* think otherwise, therefore Mr. Tegetmeier's observations on it do not apply to us. His remarks on "Richardson and trashy compilations of men who wrote because they were paid so much per page," may be equally said of many other writers on various subjects. Poor author is a bye-word, and many have written on the spur of the moment, for the sake of bread; and a great author says, that "he is a wise man who only publishes one book," meaning at his own expense. But this cannot be said of the late Mr. Richardson, for he wrote for a Dublin publisher, and having little or no knowledge of bees, he was easily led into error, by copying from some of our leading writers on this "side of the water." However, all those who believe that £50 a-year can be made by keeping bees, have no reason to complain of his statement, that from "£10 to £17 profit can be obtained from a single set of boxes, in one season—sufficient to pay the rent of from five to ten acres of land." This came under our notice, when we reviewed Mr. Richardson's book in the *Gardeners' Chronicle* for 1847, and we recollect saying in reference to it, "who would not keep bees?"

We shall leave it to the candid reader, who may take an interest in bees, to judge of the difference between the tone of Mr. Tegetmeier's first notice, at page 412, of our paper, on Warder's book, at page 382, of Vol. XVIII; and his second one, at page 234, in reply to our next one, page 52, already noticed. By way of guidance we may state, that we first said that Warder, like most others of his day, had strange notions of bees, and even professed to bring dead ones to life again. Mr. Tegetmeier spoke of that lightly, and said much in favour of Warder's method; and observed that "with slight alterations it was almost identical with the most profitable system." We noticed some more of Warder's errors in our next paper, to which Mr. T. says, "I am quite aware of their existence, and of more serious ones not quoted;" and he advises to place the

"empty box above the stock to receive virgin honey without brood, instead of below." We need hardly state this is just the reverse of Warder's plan, which in these days is called *Nadir-ing*, in fact the common plan of *eking*; which accords with his ideas of bees. For he states that the "nature of their workings is always to work downwards, and not upwards."

Having spoken of errors and strange notions in that old writer's book, we may note the fact of there having been "nine editions of it in fifty-three years;" it only shows that his ideas were conformable to the notions of his day. We may further observe, that if some writers, in these days, would but study the habits of these insects more in their hives, than in some books, perhaps they might see that they can form cells either upwards or downwards. Likewise the truth of our previous remark, that success depends more on the seasons and pasturage, than in any peculiar construction of hives. In some seasons we have had "virgin honey without brood," both by the simple way of storifying, and the collateral plan, while in others, just the reverse, it being mixed with brood and pollen. Much, of course, depends on the strength of the colonies, and where the bees form brood-cells to attract the queen's attention.—J. WIGHTON.

TO CORRESPONDENTS.

WARDIAN CASE (*C. L.*).—Ipomæas, Phlox Drummondii, and others, which you enumerate, will not thrive in such a Case. Ferns and Lycopods are best calculated for it. If you refer to our No. 432, you will find full directions.

GARDEN PLAN (*A Monthly Receiver*).—We have over and over again declared, that we cannot plant flower gardens. No one can do so justly, unless he has seen the garden.

DAIRY MANAGEMENT (*An Old Subscriber*).—We recommend you to buy "The Modern Dairy and Cowkeeper." It is by Cuthbert W. Johnson, and published by Ridgway.

GLASS FOR CONSERVATORY ROOF (*L. R. N.*).—We have one, such as you describe, roofed with Hartley's Rough Plate Glass.

CRICKETS (*A Sufferer*).—Scattering Scotch Snuff about their haunts drives them away. Wide-mouthed bottles partly filled with beer and water, and sunk into the ground, traps them.

MACARTNEY ROSE CULTURE (*M. S.*).—Although the *Macartney* Rose is almost an evergreen, and looks very different from all other Roses, the nature of it is exactly like the nature of the old *Moss* Rose, and the same kind of pruning and thinning will do for both, when they are against a wall, or fence, or stake; but the common way of growing the *Moss* Rose, as a dwarf, requires it to be pruned very close every year, and the *Macartney* would not submit to that dwarfing system, and that is the only difference between the two kinds of Roses. Moreover, the *Macartney* is the best Rose to plant against the south front of a dwelling-house, on the south side of a line drawn across the centre of England, to be trained and pruned very like an Apricot tree.

APPLYING GUANO (*A Subscriber, Wiltshire*).—Dissolve five ounces in every ten gallons of water, and give the soil about the roots of the crops a good soaking once a week. The best of all manure for your kitchen garden crops would be your house sewage. We have a well into which all is collected, and from which we obtain it by means of a pump.

BEETLE ON PEACH TREES AND VINES (*A Constant Reader, Buxton*).—The specimens were crushed to pieces by the post-office stamps, but there were enough of the limbs remaining to show that the insect ravagers are a species of *Cureulio*, probably *C. picipes*. Your only remedy is to spread a table cloth beneath the trees, and to jar these enough to shake down these little beetles.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

APRIL 7th and 8th. NEWCASTLE AND NORTHUMBERLAND. *Sec.*, Mr. W. Trotter, South Acomb, near Newcastle.

JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. *Sec.*, Mr. John Kingsbury, Hammet Street, Taunton.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. *Sec.*, Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. *Sec.*, Mr. James Beesley.

AUGUST 30th and 31st, and SEPTEMBER 1st. NORTH HANTS. *Sec.*, Mr. T. Moore, Fareham, Hants.

N.B.—Secretaries will oblige us by sending early copies of their lists.

FEEDING POULTRY—EXHIBITION BIRDS.

It has often been said, that a man may tell a lie till at last he believes it to be perfectly true. Most persons will admit, that it is not difficult to persuade people that they are just the opposite of what they really are, by constantly telling them so.

We once knew a man, who was nicknamed "the Duke," and, although as unlike in person, or mind, as could possibly be, yet he was at last thoroughly convinced he was the exact counterpart of the Duke of Wellington. He, from the time the conviction took hold of him, was always playing a part, and studying to carry it to the life. Long before his death, however, he ceased to be an actor, and honestly believed it was his nature, and he was proud of it, to resemble the greatest man of the age. People tell us THE COTTAGE GARDENER is the greatest poultry authority, and we believe it.

Many will recollect the late Sydney Smith's description of a certain statesman. We cannot quote literally. He compared him to his cook making puff paste. She rolled it out, and then set to work cutting hearts, and squares, and crosses, and all sorts of zig-zags, but it never entered into her head, that she could do wrong. Just so with ourselves. We do not think we can, and the number of queries we receive, justify our belief. Some of our readers do not approve the curt answers in the "Letter Box." They want a longer notice, and more information on the subjects to which they refer. Be it so.

No. 1.—"Be good enough to state the best vessel, or hopper, to contain food intended for fowls. Instead of two lines, in small print, at the end of the *Chronicle*, could you not, now there are no Shows, give us your opinion on the subject?" Willingly and smilingly, for we cannot help it, it is so "cur'us." When you feed your horses by scattering their corn on the floor of the stable, then feed your fowls out of a hopper, trough, or any similar contrivance.

Fowls are intended to pick up their food, grain by grain, and with it, small stones, and blades of grass. These help digestion; but while in search of the grains of corn, they find much natural food, as insects, &c., among the herbage. A fowl is not intended to eat a *mouthful* at a time. All birds have crops. They are merely receptacles, and when over-filled, have no power of emptying themselves. Hence the frequent complaints of fowls dying crop-bound. If a bird feeds from a vessel filled with grain, the crop is unnaturally replete in a few minutes; it is needless to say discomfort follows, and the only remedy at hand is to drink. A quantity of water is swallowed, and the mal-aite is increased thereby. There is a disinclination to exertion, the fowl squats about, and the seeds of disorder are sown. In many cases it dies; in others, the crop is obliged to be opened; and those who have performed this operation, know how long the patient is in recovering.

We have next to answer the query, "Whether we think the writer may exhibit his fowls, bred from prize parents, with a good hope of success?"

To this we may say, much depends on the place where they are shown. There are certain things to be acquired only by experience, and the cheapest mart for that commodity is an Exhibition; but we recommend our correspondent to make his first attempt at some small local Show, early in the autumn; to attend it, to study the decisions, to observe the points in which he excels, or is deficient; and, with the knowledge thus gained, to venture on the great competitions of the winter. But there is another point. The prize birds he bought were not the average of the yard, but the chosen ones. It follows, then, their produce will not all be as good as themselves; and, therefore, only the pickings can hope for success. This is far more dependent on the selection of the birds composing the pen than people imagine; and two very good, and one inferior bird, will never be a first-prize pen, unless the victory is so easy as to render it almost valueless. The art of matching and selecting birds can only be learned at a Show, and the attention of the beginner should be especially directed to the pens belonging to those who have achieved reputation, and whose constant success is a proof that they understand the subject.

It is very difficult to begin with success, but it is not impossible; and distinction is inevitable, if the pursuit be well and carefully followed.

We have heard of some exhibitors, who are sated with success; we wish they would send us a few papers, showing how this monotonous result was accomplished, that some of the many aspirants to the same distinction may learn therefrom. We once heard of an enthusiastic man, who took to fly-fishing late in life. He whipped the water unmercifully, but at the end of two seasons he had not hooked a salmon. His patience and perseverance deserved a better reward; but when roasted on the subject he only said, "I should like to know

how a man feels with a large fish at the end of his line." Many exhibitors have the same feeling with regard to the pieces of plate at Poultry Shows.

MR. WORRALL, DEFENSIVE AND OFFENSIVE.

THE letter of "PRESTONION," in your number of March 23rd, contains the following assertion, which, if unnoticed, would give your readers an erroneous impression. I, therefore, crave your indulgence, in allowing me to reply as early as possible:—

"Now, at the time named, Mr. Worrall was himself made personally acquainted with the fact, that long before any application was made either to the Rev. Mr. Pulleine or Mr. Baily, the Preston Committee had, by a unanimous resolution, solicited the services of Mr. Hewitt as one of the Judges, and had actually appointed that gentleman."

So far from this being the truth, I assure you, that when I arrived at Preston I did not know who had officiated as Judges, and inquired from Mr. Teebay, one of the Committee, whom I met at their printer's. I am, therefore, at a loss to know how your correspondent could make such a groundless assertion; especially as I was given to understand, when my influence was requested to induce both the Rev. R. Pulleine and Mr. Baily to officiate at Preston, that Mr. Hewitt would only be appointed as a last resource.

The publication of "PRESTONION'S" letter is quite at variance with your profession of impartiality, as you refused to publish an unsigned letter, reflecting upon the judging at Preston, but have no scruples in publishing personal abuse against an exhibitor.

It is, at least, pleasant to know whether our correspondence is with a gentleman, or a ticket-of-leave man; and I have no hesitation in telling "PRESTONION," that, had he intended to sign his name to it, his letter would have been written in a very different tone.

Mr. J. B. Chune ridicules my purchase of the Golden Mooney pullets, which I exhibited at Birmingham; he is, perhaps, unaware that I was one of a great number of amateurs who noticed, in his Cup pen, an old Mooney hen exhibited with chickens of 1857; and that I have since ascertained that they were purchased from John Andrews, of Ashton-under-Lyne, with a perfect knowledge of the antiquity of one of them: this fact was communicated to me, at Preston, by Andrews himself.—WILL. C. WORRALL.

[We had "PRESTONION'S" address before we published his letter. Cannot Mr. Worrall write without recrimination? It is no answer to a charge to reply—"Oh! but you did worse!"—ED.]

THE WORRALL CONTROVERSY.

I HAVE read the communications, which have appeared in your valuable paper, from Mr. Worrall and Mr. Chune, respecting what Mr. Worrall wishes to term the "Golden Mooney" question; but, from the tenor of this gentleman's letters, I rather fancy it was but a cloak to have an attack once more upon his old opponents, Mr. Hewitt and Mr. Chune. I hope that in his capacity of *Judge*, over Mr. Worrall's fowls, Mr. Hewitt will not deign to take any more notice of him; but, with respect to Mr. Chune, I am glad that he can look down from his pinnacle of fame upon Mr. Worrall, and smilingly say, "try and get up."

I can speak from personal knowledge of the birds shown by this gentleman at Preston, and I am sorry to differ from Mr. Worrall and his Liverpool friends, whom I overheard, as usual, condemn the Judge's decision, with as great an assurance as though he was a judge of a Golden-spangled *alias* Golden Mooney.

I should very much like this Mooney question to be discussed by *competent authorities*, such as Mr. Baily, Mr. Hewitt, and other well-known judges, and to abide by their decision; but so long as they are silent as to the markings of Golden-spangled Hamburgs, I, as an exhibitor, will abide by their decisions, irrespective of what I am afraid will become a household word, "discontented Mr. Worrall." At the same time I cannot but say, that Mr. Worrall possesses some birds

that cannot but be called first class; but I fancy that the honour is due, not to the money that bought them, but to the *humble breeder*.

While on this point, I am reminded of a report, that appeared in *THE COTTAGE GARDENER*, of the Liverpool Show, wherein it said, that a pen of Game Bantams shown by Mr. Worrall deserved especial mention, and, if fortunate, "will place him in the position as a Bantam exhibitor that he has so long occupied in Hamburgs." I wonder, when Mr. Worrall read this, if it recalled to his memory the very unquestionable manner with which he got possession of the two hens shown there, and at other places, by him?

Respecting "the Lancashire touch," as Mr. Chune terms it, of cutting part of the feathers out, I can speak personally of the Golden-pencilled that Mr. Worrall won with at Liverpool, and can say, that the hens hackle feathers had been cut, or plucked, to a shameful extent.

While on this Liverpool Show, which has been mentioned in your valuable paper several times, to the no great credit of the managing Committee, may I ask, how it was that the servants employed on that occasion were men belonging to gentlemen, who exhibited to a great extent—and, by referring to the prize-list, it will be seen, figured pretty considerably among the successful exhibitors?—I allude to Mr. Douglas and Mr. Gilliver, without thinking for a moment that the decisions were at all influenced by them. I think it would have been more satisfactory to the generality of exhibitors, had they employed disinterested persons. The gentleman of a higher grade, mentioned in Mr. Douglas's letter, in No. 495, I leave your readers to imagine. I hope that, at the next Exhibition at Liverpool, Mr. Worrall will advocate, with his consummate ability, the appointment of a "*Game Judge*."

I would not have troubled you with these lengthy remarks, but I think it is high time that these continual letters of disapproval from the Judges' decisions be put a stop to. If all unsuccessful exhibitors had to *rush into print* to soothe their rage, like Mr. Worrall, the gentlemen to whom we are indebted for accepting this not over-pleasant duty will be known to us in that capacity no longer.

If Mr. Worrall fancies he is more competent for the office than those we now have, let him at once launch his bark in the stream; and, at the same time, I would advise him to keep within hail of a *pilot*, lest he may founder among the rocks.—BIRCHEN COCK.

MR. WORRALL'S DOINGS AT LIVERPOOL.

I MUST decline complying with Mr. Worrall's request, that I should send my real name. I have a lively recollection of the personal tone he assumed in his correspondence, last year, with Mr. Hewitt, and I do not choose to subject myself to a repetition of it. Surely Mr. Worrall *can* either deny, or explain away, the report I alluded to, viz., "That Wm. Gilliver, a paid servant of Mr. Moss (Mr. Armstrong), and in charge of his Game cocks, was *selected* to pen the 100 cocks in the Single Game Cock Class." Is this report true, or false? If false, let Mr. Worrall say so, and I for one shall rejoice at such a charge being disproved; but, if true, I submit that it was a very unfair and improper proceeding on the part of Mr. Worrall, that William Gilliver, the trainer of seven cocks, belonging to the Secretary, should have been selected for this duty. Why could it not have been done by the same servants of the Show who penned the other birds? I firmly believe, what I have heard to have been the case, and if so (in spite of Mr. Douglas's statement), William Gilliver *did* have an access to his own birds, which other servants had not.

Mr. Worrall's explanation of his having substituted Mr. Armstrong's for Mr. Moss's name is equally absurd and improper. One of the Liverpool rules states, "That the birds must be *bonâ fide* the property of the exhibitor." Yet, by his own showing, Mr. Worrall, at the last moment, breaks his own rule, in favour of his co-Secretary.

All the remarks made on this matter confirm my impression, "that gentlemen ought not to act as Secretaries of, and exhibitors in, a Poultry Show, at the same time;" and, in spite of Mr. Worrall's criticisms on Preston management, this was the feeling which dictated the conduct of at least one member of the Preston Committee.

You, Mr. Editor, can bear me out that I have no personal feeling, or interest, in these matters, Messrs. Hewitt and Worrall being equally all but strangers to me. My only object is fair play. It is a pity Mr. Worrall should attack the Preston Show, merely because Mr. Hewitt was the Judge. Of the justice of the decisions at Liverpool and Preston I cannot speak, as I was not there, but though doctors (and Judges too) will occasionally differ, I believe the Judges at both Shows to be not only honest, but able, and their awards generally give satisfaction.

In conclusion, let me (not in an unfriendly spirit) counsel Mr. Worrall to set his own *Show* in order, before being too severe on Preston, and to remember that any man, with glass walls, who *will* throw stones at his neighbours, may reasonably expect to find his own glazier's bill something very considerable.—FAIR PLAY.

GRUMBLINGS ABOUT EGGS.

In your paper of the 16th ult. a correspondent, who signs himself "R. G.," touches upon a point, in which there really is a difficulty involved, although he writes in a tone and temper which is not likely to clear it up.

I do not know, or care to know, whose identity is concealed beneath the initials "R. G."; (do these stand for Regular Grumbler?) but whoever he may be, it is most certain that, among the amateurs, or dealers, whose honour and veracity he impugns, there are men whose integrity is as established, and character as unblemished, as his own.

Generally, he is more rash than wise who indulges in sweeping assertions against any class of Englishmen, whether black coats, fustian, or motley, be its distinguishing wear. Especially is there something of audacity in his conduct, who comes forwards and makes this kind of complaint:—"I have had dealings with *several* individuals, with a uniformly unfavourable result." For, consider, what is the deduction which necessarily must ensue from such a statement. In each transaction, *two* parties are involved; each transaction, the same unfavourable result. Which side is most likely to be to blame for this uniform failure? The side, which always remains the same, with circumstances the same? or, the side, in which the individual and circumstances vary on each occasion? I think there can be no doubt that, as the result is in each case the same, the side, which in each case remains the same, is more especially the cause of this unvarying failure. I am more skilled in gardening than in fancy poultry, and I cannot help thinking that the old controversy of "bad seeds" is identical with the new cry of "bad eggs, and rogues who sell them." Twenty years ago, I used to see similar attacks upon seed merchants; but then, as I believe the case is now, it was not the more skilful, or experienced gardeners, who indulged in the clamour.

The difficulty in each case is the same: those who deal in possibilities (like eggs and seeds) cannot insure uniformity to sample, as they may who furnish fowls and plants. Every man of experience knows that good seedlings are the exception, and not the rule; and it is the same, in a greater degree, with eggs of poultry. It is the uncertainty which gives the charm to both pursuits; the good bear but a small proportion to the ordinary, and the good can only be brought to show to advantage by a skill and care, which do not belong to every novice, who thinks himself entitled to complain. Moderate your expectations, gentlemen, and increase your skill, and you will find there is quite sufficient account to be given of any failure you may meet with, besides the old one resorted to so long, by hasty sufferers, *i. e.*, "that all men are liars."

I think poultry fanciers may take example by gardeners, who have almost weaned themselves from this foolish method of accounting for non-success: a little more candour and manliness would improve our disappointed competitors. It is long since I have seen, among the contributions to *THE COTTAGE GARDENER*, the petulance and rancour which have lately disfigured *The Poultry Chronicle*.—SENEX.

BUYING EGGS.

AMONGST the many, as your correspondent "R. G." says, who have been defrauded in the matter of poultry and eggs,

I must not be included. I have bought fowls from several of the first poultry fanciers in England, and have *not* been disappointed. I have purchased only two sittings of eggs, the first from a *black coat*, when I was not only most successful in the result, but was treated with the greatest liberality. My second remains to be proved; but, as it is in no way connected with the ecclesiastical profession, *that*, at all events, will be exempt from censure, should it prove a failure. I will give "R. G." this piece of advice. Having tried coats in general, and black coats in particular, let him now try the *petticoats*; and, as their predominant colour is scarlet, he will be as far removed as possible from the obnoxious hue. I quite agree with him, that there is considerable imposition about poultry, and that very many persons tell deliberate falsehoods on the subject: still, his assertion is too sweeping. I advertise neither eggs nor fowls, but I have sold numbers of both, and have never heard of any complaint. My conscience also tells me, that I have not wilfully deceived any one, but have told the truth frequently to my own disadvantage. I trust and believe, that there are numbers who act in the same manner, though "R. G." has not had the good fortune to meet with them. They are not confined to either sex, but I will guarantee that, should he feel disposed to make the experiment, he will meet with honesty (though no one can promise perfect success—that depending somewhat on the management of the fowls and eggs, when they have reached their destination) from the writer, who is proud to sign herself—THE CHAMPION OF THE POULTRY WORLD, AND A SCARLET PETTICOAT.

BLACK POLAND FOWLS.

I AM a breeder and exhibitor of White-crested Black Poland fowls, and as such I claim your indulgence to insert these few remarks on the manner in which Poland fowls are generally classed at several of our exhibitions, with the view of impressing on the minds of the Committees of Poultry Shows the propriety of awarding prizes for separate classes of Poland fowls, thus giving honour to whom honour is due. I consider the classing of White-crested Black Polands with any other variety of Polands is not giving the breeder of either class a fair chance. Why not offer separate prizes for each variety, giving the preference to White-crested Black Polands, from the superiority they bear, both for plumage and produce of eggs, over any other kind of Poland?

I have learnt the opinions of other breeders on this subject, who are of the same opinion as myself, that the White-crested Black Polands are deserving a distinct and separate class from any other variety; and if Committees were to adopt this principle, their entries would exceed three times the number now made. For instance, if I see White-crested Black Polands classed with any other variety, I don't care to send a pen of birds; whereas, if they had been classed separately, I should send three pens, perhaps four. The same feeling exists with other breeders, friends of mine.

I sent two pens of White-crested Black Polands to the Preston Show, taking the second prize, and being highly commended with the other pen; the first prize being given to Black Polands, and the third prize to White Polands.

If Committees were but to give it a thought, they would perceive what slight encouragement it is for breeders at a distance, sending their birds to a Show from 200 to 300 miles off, to compete for a piece of plate, or a prize in money—barely sufficient to pay for the entries and the expense of carriage—against five or six other sorts of Polands, as is frequently the case, when Gold and Silver are mixed up with Buff, Black, and White.

In making this suggestion, I wish it to be understood, that it is not for the sake of obtaining either of the above-named prizes, but solely, as I stated in the first instance, that honour might be awarded where honour is due.—GEO. RAY.

CURE OF GAPES.

THE most interesting season, for breeders of poultry, has arrived. Last spring you gave directions for the cure of "The Gapes," by means of the fumes of turpentine. Many of my chickens, and some hens, were much affected by this disease; I

tried your plan, with very indifferent success; when I fancied them cured, they pined and died; only one was permanently restored. I was advised to try a pill of tobacco, by two persons who had had great experience in rearing both Turkeys and Dorking fowls. I tried the remedy, and found it answer admirably in every case; nor had I to repeat the dose. The tobacco I used was "Bristol Bird's-eye," and the pill the size of a large pea.—QUIS.

PIGEONS.

TOYS.

VARIETY 17.—THE HELMET (*Columba Galeata*).

Mr. Moore, in his "Columbarium," 1735, in describing this variety of Toy Pigeon, says,—“This Pigeon is much about the size of a Nun, or somewhat bigger. The head, tail, and flight feathers of the wings, are always of one colour, as black, red, or yellow; and I have been informed there are some blue, and all the rest of the body white, so that the chief difference between them and the Nun is, that they have no hood on the hinder part of the head, and are gravel eyed.” He further remarks,—“They are called Helmets from their heads being covered with a plumage which is distinct in colour from the body, and appears somewhat like a helmet to cover the head.”

I have never seen any of these Helmet Pigeons, as described above, with dark flights, and believe the variety to be extinct, at least in this country.

The few Helmet Toys that are now met with in England, are, I believe, descended from the German Helmet Tumblers (*Kappen Tumbler*), but bred coarser, and with less care; the upper mandible is dark, the lower light, the top of the head, in a line from the corners of the mouth across the eyes, is coloured, giving the bird the appearance of wearing a cap or helmet; the tail is also coloured, the rest of the body being white, except in those that are feathered footed, in which the feathers on the feet, from the heels or hocks, down the toes, are coloured like the head and tail; the irides are often black; though very frequently broken or half coloured. I do not, however, regret the scarcity of this variety, and I consider the fancier would be better repaid for his trouble in breeding the German Helmet Tumbler to a higher standard, than perpetuating a Toy of the same colour or marking. Those Helmets I have seen have been either red or yellow headed, but in Germany the Helmeted Tumblers are also bred with black and blue markings.

I have, also, seen a sub-variety, or perhaps, a cross-bred, in colour blue, the top of the head and tail being a deep red-dish strawberry, something approaching plum colour in shade. And these last were also flying Pigeons of some note.—B. P. BRENT.

OUR LETTER BOX.

HEN BREATHING WITH DIFFICULTY (*W. Wilson*).—Your Spanish hen is probably over-fed, and consequently too fat. Try soft food, not very nourishing, and plenty of green food. We cannot be certain of the cause from the mere announcement of the fact that the hen breathes with difficulty.

HENS DYING ON THEIR NEST (*An Enquirer*).—The fact of four dying in succession on their nests, convinces us that they are either poisoned, or are too fat, and consequently egg-bound, and die of inflammation of the egg-duct. The latter, we believe, will be found to be the case. Why did you not have the hens opened. We extract the following from our "Poultry Book for the Many":—"INFLAMED EGG-ORGANS.—*Symptoms*, going to the nest without laying; laying shell-less eggs; dropping eggs from perch or elsewhere. *Cause*, over-feeding. *Remedy*, low diet of mashed Potatoes and boiled Rice for a week, or longer; giving a desert spoonful of castor oil, and a pill containing one grain of calomel, and one-twelfth of a grain of tartar emetic every second day for a week."


LONDON MARKETS.—APRIL 5TH.

POULTRY.

Although the supply is still rather below than above the average, yet the falling off in demand, owing to the Easter Holidays, has caused last week's prices to maintain themselves with difficulty.

Each.		Each.	
	6s. 0d. to 6s. 6d.		3s. 0d. to 3s. 3d.
Large Fowls ...	4 6 " 5 6	Guinea Fowls .	0 0 " 0 0
Small ditto.....	3 6 " 4 0	Turkeys	0 8 " 0 9
Chickens.....	7 0 " 7 6	Pigeons	1 4 " 1 5
Goslings.....	3 6 " 4 0	Rabbits	0 9 " 0 10
Ducklings		Wild ditto	

WEEKLY CALENDAR.

Day of Mth	Day of Week.	APRIL 13—19, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
13	Tu	Arum crinitum.	29.444—28.976	47—32	W.	.16	11 af 5	50 af 6	sets		0 32	103
14	W	Athanasia tomentosa.	29.465—29.273	52—24	N.W.	—	9 5	52 6	8 a 10	1	0 17	104
15	Th	Azaleas.	29.680—29.563	55—25	S.W.	.09	7 5	54 6	9 44	2	0 2	105
16	F	Boronia latifolia.	29.886—29.763	51—27	S.E.	.13	4 5	55 6	11 16	3	0 a 13	106
17	S	Camellias.	29.925—29.911	60—45	S.W.	—	2 5	57 6	morn.	4	0 27	107
18	SUN	2nd SUNDAY AFTER EASTER.	29.944—29.844	69—39	S.	—	0 5	59 6	0 34	5	0 41	108
19	M	Cinerarias.	30.131—29.878	68—32	S.E.	—	IV	VII	1 34	6	0 55	109

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 57.5° and 36.5°, respectively. The greatest heat, 73°, occurred on the 14th, in 1852; and the lowest cold, 20°, on the 19th, in 1851. During the period 128 days were fine, and on 89 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

BEET.—Sow for a general crop.

BORAGE.—Sow; it is good for bees.

BROCCOLI.—When the heads are cut, remove the stumps, as they only harbour slugs and vermin.

BRUSSELS SPROUTS.—Make a good sowing for winter use.

CABBAGES.—Sow, to produce plants for winter and spring use. If autumn-sown plants are very scarce, spring sowing should be forwarded as much as possible by pricking out the plants on a warm border, and watering them when necessary.

CARDOONS.—Sow in trenches, where the plants are to remain. The trenches to be four feet apart; a few seeds to be dropped in at intervals of eighteen inches.

CAULIFLOWERS.—Prick out the young seedlings on a warm border; earth-up those that have stood the winter beneath handglasses.

CUCUMBERS.—Keep the shoots well regulated, as their fruitfulness, in a great measure, will depend upon it.

HORSE RADISH and JERUSALEM ARTICHOKE finish planting.

KIDNEY BEANS.—Sow a small quantity in a sheltered place.

LEEKs.—Sow for a late crop.

LETTUCES.—Sow on a sheltered border.

MARIGOLDS.—Sow, where they are required for kitchen purposes.

MUSHROOMS.—In making beds, to produce through the summer, a portion of loam should be mixed with the dung, to give greater solidity to the bed.

NASTURTIUMS.—Sow for pickling.

ONIONS.—Sow *Silver-skinned* very thick on poor soil for pickling.

POTATOES.—May be planted still for main crop.

RADISHES.—Sow every fortnight.

SALSAFY and SCORZONERA.—Sow for the principal crops.

SAVOY.—Sow for late crops.

SCARLET RUNNERS.—Sow in a sheltered place.

SWEET MARJORAM, and other annual herbs, sow.

TOMATOES and VEGETABLE MARROW.—Sow in heat, to plant out.

Sprinkle soot with a liberal hand over the ground; it will act as a stimulant to vegetation, and as a preventive to the increase and attacks of insects. Hoe between plants in rows to destroy weeds, to stir up the surface of the ground, and to draw earth to the stems of early Cabbages, Cauliflowers, Peas, Beans, &c.

FRUIT GARDEN.

FIGS.—Regulate, leaving the shoots thin.

FRUIT TREES.—Prune any decayed shoots, or the ends of any that are dead, to the live wood. If any were lately planted, to be mulched, spreading the rotten dung, old tan, or any other short litter, on the

ground over the roots, especially where exposed to the sun, to prevent evaporation from the soil. Tall standards, lately planted, to be staked. All suckers and shoots on the stems to be cut away.

GRAFTING may still be performed.

VINES.—Finish pruning.

FLOWER GARDEN.

The flower garden should now be dressed, and made neat. If there are any bare places on verges, or on the lawn, sow grass seed very thickly. Turn or re-gravel walks.

ANNUALS, HARDY, such as Mignonette, Sweet Peas, Convolvulus, &c., sow. Biennials and Perennials transplant into beds or borders, to flower this season.

BOX EDGING.—Plant where wanted.

CARNATIONS.—Finish planting in beds or borders.

CHRYSANTHEMUMS, in pots, not wanted for propagation, may now be planted out in the borders. Prepare beds for the reception of summer plants, by frequently forking them over. Leaf mould may be added; it is preferable to other manures, for these frequently produce rampant growth with few flowers.

CLIMBING PLANTS.—Sow and plant, to run over arbours or fences, or to climb upon sticks in borders.

EVERGREENS.—Plant for hedges, or for any other purpose. If the weather continues dry, they should be frequently watered. Cut out decayed wood, and prune where they require it.

EDGINGS and HEDGES clip where needful.

NEW WORK to be finished as soon as possible.

PANSIES.—Sow, and propagate by cuttings.

POLYANTHUSES.—Sow in a border with a north-east aspect. Soil: leaf mould, loam, and a little sand.

RANUNCULUSES.—Any cracks that may appear in the beds during dry weather to be filled up; as much of the success in their cultivation depends on the soil being kept close round the rising plant.

STOCKS, ROCKETS, &c., plant in beds or borders.

SHRUBBERIES and PLANTATIONS.—Finish pruning.

WILLIAM KEANE.

GLOXINIAS AND ACHIMENES.

GLOXINIAS.—We shall not see Gloxinias bedded out of doors in our time; but that is no reason why thousands and tens of thousands of them, and of us, should not be experimented upon, to see how many more of us could "do" them, if we did but know how easily that could be done.

Gloxinias have very much improved within the last few years, not in shape or substance, however, or in any of those "points" which make a new flower so delightful in the eyes of a professional florist; the vast improvement is in the colours and combinations of tints of colour in the flower itself. If the new Gloxinias were men, women, and children, I would, or, at all events, I could, claim a prescriptive right over them; that is to say, I should claim to be

their chieftain, in right of my being the first person who ever undertook, or, rather, succeeded, in improving the race; and not only that, but, also, I was the first botanist who furnished the evidence to prove that there was no natural bar to hinder the genus *Sinningia* from being united with *Gloxinia*, and my offspring from the union of the supposed two genera is the great grandmother of the present race of improved Gloxinias. It is true, I did not behave very gallantly to that ancient dame, for I once turned her out of doors; still, that cannot affect my claim to the clan-ship over her children. The word *clan* is the Gaelic word for children, in the same sense as the Hebrews were called the Children of Israel, or the clan of Israel, and in that light I am the father of the hybrid and high bred Gloxinias. To prove my solicitude for their welfare and respectability, I now write to sing their praise in the ears of a new and imposing race of cultivators—that race who do their gardening with the help of one little greenhouse, or may be, only a Cucumber-light. That they can do so is the nearest-proved experiment, and that the most carefully conducted, of all our endeavours in the Experimental Garden, to open the eyes of our less fortunate fellow-subjects.

In the first place, let it be distinctly understood, that if Mr. Weeks's one-boiler system of heating stoves, forcing, and propagating places, were in operation, I would not avail myself of one inch of the whole concern to further the prospect of one single experiment, for this reason—that those who are able and willing to go to that expense, ought to be as able and willing to keep scientific gardeners of their own, to carry on all they may want, or think desirable to have, all kinds and degrees of experiments among the rest. My experiments are for the use of those who want the means, or who, having the means, want the proper learning to carry on their gardens with such helps as they can hire in their neighbourhood; therefore, none of the usual expedients, called forcing, are resorted to in these experiments. We manage a select collection of *Achimenes*, and a very choice assortment of hybrid Gloxinias, in the Experimental Garden, without forcing, and the way we do them may be confidently relied on.

We have them in bloom in the conservatory from the end of June to the latter part of September; but they would do in the smallest greenhouse just as well, and also in living rooms, where *Geraniums* are flowered. When the bloom is nearly over, we keep the pots rather dry; and as the flowers and foliage begin to look seedy, we move them out of sight to the top shelf along the back wall, close up to the light, and under the constant draught of air, in and out, night and day, till after the middle of November; by that time the soil is as dry as Scotch snuff, and the "roots" are as thoroughly ripe as if the pots were in an Orchid house.

After the roots, or tubers, are thus ripened, we have proved most conclusively that they will keep all through the winter as safely and as long as late Potatoes, if they are kept quite dry, and free from frost, and from the influence of the air. The whole secret for resting Gloxinias and *Achimenes* for a very long period, or from the fogs of November to the April showers, is to keep them carefully excluded from the air. The simplest way to do that is to shake all the soil from them, and to put each kind into a separate bag of coarse paper, with its name, or tally, or number stick, along with it; the name might also be written on the outside of each bag. The mouth of each bag is tied as close as a bladder, and all the bags are put loosely into a basket, and the basket is put by in a warm closet in-doors. I have grown thousands of seedling Gloxinias before there was a hybrid in the family, and had my share of them ever since; but I confidently assert, that I never had a finer or more

plump-looking set of "bulbs," in all my experience, than I saw at the Experimental Garden last week, when one set of the Gloxinias were unbagged.

I have known gardeners to lose them by the dozen some years back, and I have had some failures myself in my day. I am also of opinion that bagging them thus, before the winter, is a more safe way to keep them than stowing them away, in their pots, in the best hothouses in England. Indeed, I am now sure of it; for there is not a single death, or a speck, or spot on all our stock of them, preserved as I have just said; and, I fully believe, every one of our Gloxinias might have been kept at rest till the middle of May, but the gardener was anxious to have early Cucumbers about Good Friday, and I was anxious to try another experiment on the Gloxinias, which, if it succeeds as well as that, is about the easiest way of resting them over a long winter, and will be valuable for thousands who have not yet turned their attention to the cultivation of this most beautiful, and most accommodating, tribe of showy plants.

This second experiment, which is now in progress, is to see, or find out, if the "roots" may not be sprouted, as they sprout the early Potatoes before planting them for good; that is, without potting them in the spring, when every inch of pot room is already crammed, and when pots are at the scarcest point. Well, to prove that, the Cucumber-bed, a box of three wide lights on a dungbed, is lined all round the sides with large, strong, healthy-looking tubers, the "roots" of our Gloxinias. Each "root" was merely pressed down in the soft leaf mould until the bud or eye was level with the surface of the bed, and each "root" having its own tally stuck in front of it. Surely nothing could be more economical than that; and sure enough nothing could look more promising than they all do at present, sprouting away as "stocky" as a stockbroker himself; and I cannot conceive why they should not be up at par before they are potted, but how much "moulds" they will take from the Cucumbers with their interlacing roots, and what sized pots they will require, and must have in consequence, are points which my hurry, and impatience to catch the market in time, prevent me from clearly indicating at present. All the nurseries have them now in very small pots, and just started; and it is the right time to buy them in for the first time, if one has a Cucumber-bed or hotbed to put them in; or, if not, have nothing to do with them till they are in bloom, and then choose for yourself, and, pray, just compare your own choice with my selection of them.

I like the upright Gloxinias the best, and everybody knows how I like clear and distinct colours and shades of colour, and how freely I should cast all plants with weak, or faint, or milk-and-water colours to the bottom of the Red Sea. *Gloxinia fulgens*, a German seedling, is the highest and richest colour among the gems. *Eloisa* has the largest crimson star on a white ground, and a purple throat; and *Tarragona* the next largest and deepest crimson star on a white ground, with a paler throat. For those who have not seen the new strain of Gloxinias, it may be necessary to say, that these star-shaped markings on the face of a Gloxinia flower may be likened to the horseshoe markings on the scarlet *Geraniums*; and as the horseshoe mark follows the shape of the leaf, so do the Gloxinia markings that of the flower; and as the limb of these new flowers is lobed more or less, the markings run up each of the lobes, thus forming a blunt star shape.

(To be continued.) D. BEATON.

NEW CINERARIA.—The name of the close, bushy, very striking *Cineraria*, mentioned at page 5, is *Admiral Dundas*.

BEDDING-OUT FLOWERS, AND OTHER MATTERS.

WHEN we take into consideration the very uncertain character of our English summers, that one is called hot and dry, another cold and wet, besides the hot and moist, and the cold and dry, and other combinations of the elements of heat and moisture, there may appear no reason to wonder at the very different results produced. In hot and moist summers, many bedding plants have a tendency to run too much into foliage, to the robbing and smothering of the blossoms, thereby causing the garden to be short of colouring. In hot and dry periods, the reverse may take place; many things may not sufficiently cover the space allotted them, or continue long enough in blossom. In cold and wet seasons, flowers are not only liable to be short of colouring, but assume a rampant and coarse appearance. About the root, it is needless to say anything. It is evident, therefore, that the question, how beds should be prepared for the reception of flowers, should receive the utmost attention; for on that no small portion of the after success depends. There are several modes in which beds may be worked-up for flowers; they may be dug deep or shallow, they may be dressed or manured, or left in their accidental condition. By manuring, I do not here confine myself to the idea of rotten dung; when I speak of manuring, there are many things in the compost yard that are occasionally more eligible than rotten manures.

It may be asked then, by what rule shall a novice form beds, seeing neither he nor anyone can determine what the summer may be beforehand? I answer, that in this, as in many gardening operations, we must judge by probabilities, taking averages. This will be found by far the safer course. Here, I may remark, that it is in general much safer to make beds deep than rich. Depth, if the soil be moderate, can never do much harm; but, a liberal use of manure is almost certain to produce some mischief, except in a few cases. It must be remembered, that depth eminently promotes durability; the roots of many of our bedding plants will descend much deeper than commonly is imagined, if the soil be loose and suitable.

But, let us here see what is demanded in a modern flower garden. First, that it be early in blossom; secondly, that it continues gay until the autumn chills commence; and thirdly, that the amount of colouring predominate much over the foliage. The question, therefore, is, how to carry out these objects with most certainty.

As to early growth, that depends much, of course, on the character of the plants when planted out; about these, more shortly.

The continuation of gaiety depends on a permanent root-action in no small degree, as also on a uniformity of moisture at the roots. But depth of soil, as before observed, is one of the chief contributory causes. Lastly, the gaiety of the colouring, and its mastery over the foliage, depends on a steady growth, one which is neither luxuriant and rapid, but more stationary, and which possesses every element for continuing so.

But we may say something about the character of soils, and composts, as far as calculated for the purpose in hand. Those, I would point to more especially, are, loam, leaf soil, old Cucumber beds, charred rubbish, brushwood, &c., and sand. I will speak of each as adapted to some of the ends in view. *Loam*, of a mellow character, has a tendency to cause plants to grow stout or robust, instead of long-jointed, and this, on account of the steady action of the roots, as compared with lighter soils, which, in growing weather, cause the plants to ramble exceedingly. Anyone may witness this fact in agricultural matters, by comparing

green crops, on light soils, with those on what are termed clay lands. When, however, they are highly manured, they produce a most exuberant plant; and this is not the object in the bed-culture of flowers. *Leaf soil* comes next in order: of this I must say a few words. If any person were to fill a bed with old leaf soil, and plant it with a coarse-growing Geranium, it would, ultimately, at a little distance, be taken for a bed of Cabbages. But few, however, make so egregious a blunder. It is, nevertheless, a very useful material to mix with other soils of a more loamy character. Its tendency, certainly, is to promote enlargement of foliage; but it is of much importance in the earlier stages of bed flowers, as promoting a rapid root action. *Old Cucumber beds* are of notoriety for almost every good purpose; they are complete in themselves for many uses. Composed in general of manure, and perhaps leaf soil, all mellowed and considerably decomposed by heat and age, they chop up into a most excellent compost; the soil becoming most intimately blended with the vegetable matters, for the manurial qualities, of course, become much dissipated. *Charred materials* I next refer to: these things have only found their way into our compost yards in later years. They are, however, of eminent service, as tending to keep compost open; but more still, they furnish peculiarly nutritious gases to the roots of plants. For flower garden composts, I prefer charred small wood, vegetable remains, &c. *Sand* is ever in request, or ought to be; even in flower gardens it is occasionally of much service, as a corrector of stubborn soils. To the above materials let me add *lime rubbish*, for a peculiar purpose or two. Those who wish to excel in Russian, or German Stocks, should use a considerable quantity of this in the soil, as also of the charred rubbish; this I have proved for years. As a general opener of stubborn soils, such things are invaluable, and are not used so generally as they ought to be. It always annoys me to see lots of such materials wasted, when they come to hand, as is very generally the case.

And now, as to preparing beds for this class of flowers, some soils are so good that little assistance is needed; of these it is unnecessary to say anything. We may here put two extreme cases, as to ordinary soils for bedding purposes, in order to illustrate the matter: that is, stubborn or clayey soils, and those which are light and chaffy. The first class above all should be well pulverised, and deeply broken; in other words they should be, to use an agricultural phrase, subsoiled; which means that, although the bottom is thoroughly broken up, there is no occasion, if sour and unmanageable, to bring it to the surface. This should be done in the month of November, if possible, and being left rough and open in character, it will be much humbled by the end of February. It must, then, be much broken and made fine by handwork, and when dry, the opening materials well worked in, whatever the compost required for the given plant may be. And here I may remark for a moment on the differing character of the plants as to growth. Take, for instance, the Heliotrope, the Verbena, the dwarf blue Lobelias, and German Stocks. What experienced man would recommend the same character of soil for each? Light soils do not need this pulverising, but they should be deeply stirred, and, as to dressing, of course, loamy applications are of themselves a great benefit.

The remarks I have here offered are founded on the supposition that amateurs, and many others who possess small gardens, desire to grow their bedding flowers to the highest perfection of which they are capable, and that they have the means of adapting their compost to this end. Those who, on a much larger scale, have extensive pleasure grounds to decorate, cannot afford to attend to such minutiae, and are compelled to

rough it as well as they can. This, however, furnishes no argument why ladies and gentlemen, of moderate experience in gardening, should not be put in possession of all the facts bearing on the subject. Many like to watch closely the habits of growth of their respective bedding flowers, and to "make each day a critic on the last." In this they may find constant amusement, leading, I need scarcely add, to constant progress.

But I must offer a few more remarks. The time for masses, confined to one colour, and one kind, seems to be passing away, and now we hear of ribbon patterns, edgings, promenade style, &c. There seems to have been two faults in the old style of all one colour, as applied to small flower gardens—the one, want of relief; the other, a monotony as to height, and the expression of form. Now, where a combination of flowers takes place of a contrariety in habit, some pains should be taken, in small beds, to adapt the soil accordingly. If the mixtures, or combinations, be in alternate lines, this is quite possible, but requires a little more pains. Sometimes, it is merely an edging of a different character that is required; and when that is the case, the matter is very simple.

To recapitulate for a moment, I would strongly urge the importance of insuring a depth, in general, of quite two feet, and this of a mellowed character, free from stagnant moisture. There are some bedding things of rank growth that care not how free from all manurial qualities soil is, provided their roots can ramble with freedom, and strike downwards, to provide against the vicissitudes of heat and drought.

I may name another mode I have practised of making up beds, and which I have found occasionally a very useful plan. It consists in making the surface of the beds richer and lighter than the lower stratum, in order to facilitate an early growth. Thus, in making up a given bed for Verbenas, after deep digging the soil, and introducing some sound loamy material, I would add, on the surface last of all, rich mellow compost, before alluded to, as also some of the charred rubbish; these materials forked well in for about six inches in depth. The plants thus take early to the soil, and this being light, the first drought induces a blossoming habit; and, by the time the greatest demand is made on their roots, they will have penetrated the loamy substratum. I have seen Verbenas much finer this way than in deep and rich beds; the loam makes them shorter jointed, and produces bold and firm trusses.

I have before adverted to the use of charred material for German Stock culture. Last year I had one of the most splendid beds imaginable, and I may here state how I prepared it. The bed, which was a plain loamy soil, was subsoiled in the manner before described; it was then covered, three inches thick, with charred material, and on this, two inches deep of lime rubbish. The whole was thoroughly mixed with the soil for fifteen inches in depth, and the surface being dressed, it was beat somewhat close when dry. These Stocks, as our readers know, are rather liable to canker or shank; but I did not lose a dozen out of hundreds, and the blossoms were magnificent.

Most of the ordinary Scarlet and other Geraniums are sadly overgrown, in the majority of seasons, through soils of too stimulating a character. I used, last year, a considerable amount of charred rubbish in the Geranium beds, and I never had a finer bloom with such moderate foliage. I would recommend all parties to make a point, as I do, of charring all small brushwood, prunings, rubbish, &c., and of using it liberally in all bedding purposes, generally keeping much of it near the surface; for, being darker in colour, it doubtless absorbs much ground heat.

Many of our annuals, too, are overgrown. I have seen neat specimens of many kinds, self sown, in walks, where they chanced to remain to flower; and, doubtless, many of the more rampant kinds would be more satisfactorily sown on undug soil. At any rate, rich borders, or composts, should be avoided, with all those that produce coarse foliage.

R. ERRINGTON.

MACCLESFIELD PUBLIC PARK.

THESE highly useful places of public resort are becoming quite common, throughout the length and breadth of the empire: this fact is exceedingly creditable to the age in which we live. Fifty years ago there were no public parks, excepting two near London. Now every town of any note either has, or is about to have, its park, to which the high and the low, the rich and the poor, the aged and the young, can resort at all reasonable hours, to enjoy equally the sweet, clear air, renovate health, and see flowers, "the stars of earth," displayed before them. It is true benevolence, of a high character, to provide such a place for our poor brethren, who live in narrow, crowded streets, courts, and alleys, and earn their bread in close, dusty, stifling factories and workshops, to give them free access to a well-kept park garden, and thus gradually give them a taste for higher and cheaper pleasures than the alehouse or the beershop can afford. Beforetime they had no place to go to, excepting, perhaps, a tea-garden, or the lanes and fields, in which they were too apt to forget themselves, and do and suffer mischief in various ways. In public parks, where numbers resort together, there are always some with proper feelings, and such shame the rest into good behaviour. I can give an instance of this, that came under my own observation. I remember being once in the Regent's Park, in the merry month of May, and seeing there an ill-mannered, ignorant, though well-dressed fellow, pull down some branches of a beautiful Hawthorn in blossom, and break them off to carry away. None of the park-keepers happened to see him, but he was observed by others, and it was a pleasant sight to see and hear them hoot him, and deprive him of his prey, shouting, "Shame! Shame!" The fellow was glad to scamper away with all his might, or, I believe, they would have given him a cold bath, for nothing, in the water.

Macclesfield, a comparatively-speaking small town, three years ago had no park. The working classes, generally, are employed in the silk manufacture. They had no place where they could have innocent amusement and health, giving recreation on half holidays, or the long summer evenings. Some of the better class of the operatives formed themselves into a Committee, and begun to collect donations, and being very successful induced a few public-spirited gentlemen, who had observed the good effects of institutions of this kind in Manchester, to join them; they met together, and agreed that a recreative and fresh-air-breathing spot was desirable for Macclesfield. They set their shoulders to the wheel right willingly, and by dint of perseverance and sound argument, overcame all fears, objections, and prejudice, and nobly accomplished the object. It was opened during the mayoralty of John Smith, Esq., of Langley, one of its warmest promoters, and is now managed by the local Board of Health, assisted by a Committee of about a dozen respectable operatives, and instructed by the Honorary Secretary, John May, Esq., himself a hearty good friend to the institution. It is supported by annual subscriptions, the profits of the refreshment room, and a small charge on the bowls for the bowling green.

The Board, in a report drawn up last November, now lying before me, observes—

“It is a subject of much congratulation, that out of so large and valuable a collection of plants, spread over a wide surface, easily removed, and comparatively without an overlooker, that, with one exception only, not a single loss has been discovered; that exception was a single yellow Rose-tree, which was taken away unobserved. When it is considered, that, at least, from computation, 19,000 persons visit the Park weekly, in the summer months, this honourable feature, to which some attention has been paid, is a well-merited tribute to the trustworthiness of the classes who visit the grounds; and equally deserving of notice it is, that on each occasion when vast crowds have been congregated, not a single instance of wilful or accidental injury has occurred. The same care has been apparently evinced, which an individual proprietor would manifest in his own garden. The opportunity of observing conduct so praiseworthy, in the midst of so much demoralisation in a manufacturing town, will rejoice the philanthropist, who will believe that the culture of such a germ is worth all the cost of the Park.

“The bowling green has been a source of daily recreation and pleasure, and its spaciousness has accommodated a large number of bowlers. It has been kept in high condition for play, and, but for the wetness of the season, the receipt would have considerably exceeded last year’s. The game of cricket has greatly increased. The park-keeper has counted forty sets of wickets pitched in the park on a Saturday afternoon, after the mills are closed. Various clubs regularly meet and play during the year, and if additional spaces could be afforded, even more playing would be promoted. The question may fairly be asked—What would become of the large masses of people who congregate in the Park on a summer’s evening after work, if they had had no such place of resort? The answer is, in some measure, suggested by a reference to the police records of the past.

“Since the opening of the Park, cases of ‘drunkenness and disorderly conduct’ have decreased in the borough twenty-three per cent., as compared with the three preceding years.

“‘Making use of obscene and profane language’ has decreased sixty per cent. ‘Gambling’ has decreased fifty-eight per cent., and ‘summary charges,’ of every class, have decreased twenty-six per cent.

“It is not presumed that these gratifying symptoms of improvement are attributable to the efforts singly of either one institution or another; but it is certainly encouraging to the benevolent, when, contemporaneously with the influence of Sunday Schools, Mechanic Institutions, Reformatories, and Public Parks, and societies of a kindred mission, these fruitful evidences can be tangibly produced. At the same time it must be remembered, that all the former institutions have shed their beneficent influences for years, whilst the Park has existed just for the period that has witnessed such a remarkable decrease of those offences which are committed by persons exposed entirely to debasing pleasures, having no means of innocent recreation. And some gain may also be placed to the credit of improved health, of both children and adults, if the pure air and exercise taken in the Park be better than in confined courts and streets. And such relaxation give a spring to industry, whilst the other elevating influences of the Park must, by degrees, train and educate the people to neatness in dress, habits of order, and respectability of conduct and behaviour.”

This is a somewhat long quotation, but it is so much to the purpose, and so excellent, that I did not think it wise to abridge it. I now proceed to give a brief description of the park. It is situated on a rather high plot of table land, about half a mile to the west, from the centre of the town; and is sheltered from the north and west winds by some large trees, that were happily there years before the park was thought of. The extent, at present, is rather more than sixteen acres, and it is laid out very judiciously. There are shrubberies, flower-beds, a large breadth of lawn or bowling green, a gymnasium, a large space for the noble game of cricket, a handsome Gothic residence

for the park-keeper, with a large refreshment room in front, and a considerable extent of spacious gravel walks, all kept in excellent order by Mr. Middlebrook, whom I found to be an intelligent and clever gardener. He has had put up a good propagating house, nicely out of sight, close to his dwelling, in which he raises an immense number of bedding-out plants, starts and propagates Dahlias, and raises tender annuals. He assured me that many of the operatives admire and take a great interest in flowers, and are continually taking lessons from him in the propagation and culture of these charming and attractive objects. It is greatly to his credit, that he makes no secret of such matters, but admits such inquirers freely into his sanctum, and gives them every information they require. The flowers under his care and management, as may be expected, are in summer very effective. A son and daughter of mine visited the Park last summer, and, on their return home, gave a glowing description of what they saw there in the flower-beds.

I was so much pleased with all I saw there, though it was in March, that I took a few notes on the spot, and will now enter more particularly into such matters as I consider worthy of notice and emulation. THE COTTAGE GARDENER finds its way so largely into every part of the United Kingdom, that I cannot help hoping that this example of public spirit in the town of Macclesfield, recorded in its pages, will have the effect of stimulating many other towns, with even a less population, to go and do likewise.

Refreshment Room.—This, as I remarked before, is large and commodious. It is fitted up with counters, a cooking range, and every convenience, so the visitor may have tea or coffee with nice hot-buttered cakes in quick time. In winter, as I saw when I was there, this room is made use of as a receptacle for scarlet Geraniums, Calceolarias, Lobelias, and other plants for the flower-beds. To keep the frost out, a range or two of hot-water pipes are laid on the floor. It serves, also, as a place to put in rustic vases. These are all of Mr. Middlebrook’s own making, and really beautiful objects they are. Outside I noticed some very decent carved heads on each angle. Indeed, Mr. M. is quite a genius with his knife and chisel. To preserve the bark on his vases, he uses a mixture of rosin and raw linseed oil; and to keep the inside from rotting he uses what he calls Stockholm tar, which he says costs 4d. per pound, and is laid on with a brush like paint.

Terrace Walk and Views.—In front of the refreshment room there is a wide terrace walk. This is a good position to observe the views of the surrounding country, though a still better place is from a raised mound lower down in the park. From it the view is magnificent, extending from Mors Cop, a lofty mountain in Staffordshire, and nearer the Blakelton Hill, and the picturesque Kerridge range, terminating with the Northern or White Nancy, on the top of which is a circular, white, pointed building, supposed to have been the site of a beacon during the civil wars. On the sides of this range the villages of Bollington and Pat Shrigley are seen embosomed in beautiful scenery. On the north-east side of this range of hills, the counties of Cheshire and Derby converge. Looking lower you are startled, sometimes, by the screams and smoke of the trains on the railway to Manchester. Looking nearer home, the new Grammar School, founded, originally, by King Edward, and well endowed, is a very conspicuous object, but very bare and desolate (why do they not plant round it?). Opposite to it, embosomed in trees, is a large house used as a boarding school. This is within the boundary of the park, and ought to be purchased and fitted up as a museum, library, and reading-room. “A consum-

mation devoutly to be wished," and, perhaps, some day, may be accomplished.

Bowling Green.—This is the best of its kind that I have ever seen. It is sunk below the general level about three feet, and is surrounded with broad grassy slopes, so that many spectators can view the game. In fine weather I was assured that the players were very numerous, and enjoyed the pleasant recreation amazingly.

The Cricket Ground is also well attended. The park-keeper said he has frequently counted sixty wickets set up. It is to the left as you enter the gates, and, of course, a large space is open for the purpose, at a distance from the flower-beds and shrubberies. Near it is the gymnasium, furnished with swings, poles, leaping bars, &c., a source of endless amusement, and muscle-strengthening exercises.

Shrubberies.—Choice flowering shrubs and evergreens have been planted on raised banks next the boundary walls. In two or three years these will be very effective. To make them grow freely, especially such shrubs as Yews and Roses, the manager has had manured with night soil, and it is astonishing how they have improved since he adopted the stimulant.

The Flower-beds.—These are as much cared for as any in a private garden. I have already alluded to the effective appearance they made last summer, and have no doubt they will be still finer this season. The soil is naturally light, hence they flower more, and leaf less than in healthy rich soils. Just now the Crocus tribe, and very beautiful. They are grown in broad patches in front of the shrubs, each patch of a distinct separate colour. It is intended, another season, to plant them in the ribbon style—one row of white, the next striped, the next blue, and the last yellow; the effect will then be greatly enhanced. It will show taste and design in arrangement.

Seats.—Substantial resting places have not been forgotten. They are of a rustic character, and are roomy and airy. Pleasant places to sit down in, and cosily enjoy the shade in hot weather, and contemplate the beautiful objects in sight.

Brass Cannons.—A couple of the trophies of our brave soldiers' victories, in the Crimea, have been presented by government to this park, and are about to be mounted in conspicuous places, on a stone plinth. They are very beautiful instruments, if we could only forget the terrible uses to which they have been applied. When will the time come when such dreadful weapons will be looked upon as relics of a barbarous age? We have the word of prophecy, that such will be the case—"When nation shall not rise up against nation, and there shall be no more war."

Pebble.—This, though last, is not the *least* curious object in this beautiful park garden. It is, I judge, the largest pebble ever seen in a park. Its weight, by computation, is thirty tons. Geologists say it is granite. It was found in a meadow about half a mile from its present site. Such a ponderous pebble took immense power and strong tackle to move it. Twenty-seven of the strongest horses had to put forth all their powers to bring it home.

All these pleasant objects are open to the public every day, excepting Wednesday and Sunday mornings. The former day enables the manager to put all things in good trim, and repair any trifling damage that may have been done accidentally or otherwise.

Any stranger visiting Macclesfield, will, I am sure, be highly gratified by spending an hour in these well-kept grounds. They are a great credit to the town.

T. APPLEBY.

WELLINGTON ROAD NURSERY.

(Continued from page 6.)

SPRING FLOWERS.

FROM the 10th of April, onwards, this nursery will look like a Dutch garden, with the immense quantities of early Tulips which were planted last autumn. Ten large oblong beds of them, and every bed from thirty to forty feet long, five feet wide, and nine rows of Tulips in each (about 200 kinds of early Tulips in all), collected on purpose from abroad, to make different selections for English "spring flowers;" and I am promised the names of all the best colours, from pure white and pure yellow, up to scarlet and crimson, and buffs, rose, lilacs, and so on, with the average height; and also those with the shortest and stiffest flower-stems. This is an excellent opportunity to save us all a journey to Holland, as few of us have yet dreamed of what may be done with early Tulips in the flower-beds.

Aubretia deltoidea grandiflora and *A. Moxii*, two best; *Oxalis spectabilis*, the best hardy; *Helleborus atro-rubens* and *Olympicus*, next best spring flowers after *niger*, or "Christmas Rose;" *Aquilegia eximia*, said to be splendid; the variegated Daisy; *Arctotis grandiflora*; *Eurotia speciosa*, the scarcest and best of our herbaceous plants; *Lychnis Sieboldii*; double dark Auricula, and ditto Polyanthus; *Gazania rigens*, the best front of a greenhouse plant we have; *Phytolacca decandra*, the best wilderness plant; *Calystegia pubescens simplex*, a plant of my own making, and now the very best hardy Ipomæa-looking flower in Europe. Fortune's double *Convolvulus* was a great curiosity, and a great favourite at first; but Beaton's single variety of the same is worth ten score of it. The right name of it is *Calystegia pubescens simplex*. These, and all the variegated hardy herbaceous plants, give hint only of what may be had here for "spring flowers."

Of Aehimenes, the best and the newest are these:—*Amabilis*, *atro-cærulea*, *Ambroise Verschoffelt*, *Carminata splendens*, *Dr. Beunzod*, *Estelle*, *fimbriata*, *gigantea*, *Heeri*, *Madame Hagerauer*, and *Parsoni*.

Of Tydæa (the tall, upright Aehimenes) these are the newest and best:—*Baron de Pret*, *Carl Schüle*, *Amabilis* as above, *Carminata splendens*, *Dr. Beunzod*, and *Parsoni*, also as above; *Dr. Picouline*, *Gem*, and *Ortgiesi*.

The following are the best and the newest of the upright-flowering Gloxinias:—Those after Fifeana, *Alba auriculata*, *Auricula*, *Bootiana*, *Comte de Neipperg*, *Dionysius*, *Donna Colonna*, *Duchess de Brabant*, *Eloise*, *Fulgens*, *Gentiana*, *Grandis*, *Helen of Orleans*, *Hendersoni*, *Imperatrice Eugénie*, *Kermesina*, *Madame Picouline*, *Pavonia*, *Princess Royal*, *Roi des Belges*, *Rosea*, *Tarragona*, *Victoria*, *Wagneri*, and *Waterwitch*. The best dozen kinds of the old-shaped Gloxinias are—*Beatrice d'Este*, *Bletso*, *Cortoni robusta*, *Corrinne*, *Dr. Reichenbach*, *Duke of Wellington*, *Eugénie*, *Frederick Leming*, *Grand Sultan*, *Marie*, *Nigricans*, *Novelty*, *Princess Maria*, *Sir Hugo*, and *Wilsoni*.

All these "roots" we have grown and bloomed to perfection, and kept over the winter on a new plan, without a stove or forcing-house, in the Experimental Garden. Any one may grow, and bloom, and keep the whole of them: hence these lists, for which I hold myself responsible; and a chapter on them will be found in our columns to-day.

The following are the best winter and early spring-flowering HEATHS (I took these in aid of "spring flowers"):—*hyemalis*, *gracilis*, *autumnalis*, and *vernalis*; *Vernix* and *V. coccinea*; *Colorans* and *C. verna*; *Caffra nana*, *Linnaeoides*, *Blanda*, *Burnetti*, *Lambertiana*, and *L. rosea*; *scabriuscula*, *McNabiana rosea*, *Melanthera*, *Mundula*, *Mirabilis*, *Pyramidalis*, *Regerminans*, *Rubrocalyx*, *Transparens nova*, *Exsurgens*, and *E. coccinea*. These will bloom from the time of taking up the bedding plants till it is nearly time to bed out again.

In the stoves, where the collections look as well as if we had no winter, I marked the following:—*Medinella magnifica* blooming brilliantly on one leg, in 48-sized pots, scores of them. Who have been romancing about this gorgeous plant, and going about saying it would not, or could not, be bloomed until it is a great bush? But there is a trick in "blowing" it, which may not be well known. First, you must not make spring cuttings of it, for if you do, you are looking to the

Shows; and to make a big plant, winter your plant or plants as high in the middle of the stove as the glass will allow; give a liberal and early encouragement to a rapid growth; finish the first growth as early in the summer as your means will allow; and before a second growth is thought of, make cuttings of the first side-shoots, and every one of them will bloom before they will begin to grow next season, because the incipient, or say the "seed of the bloom," was in the shoots when they were made into cuttings; then, by "forcing" and "retarding," little *Medinella* plants, not more than a foot high, may be bloomed from Christmas to May day.

Rhopala jonghei (shong-ei) has the largest and the most magnificent-looking foliage of the order. *Rhopala princeps*, *Skinneri*, *magnifica*, *sessilifolia*, *Caley*, and *corcovadensis*, are the next best of these "fine-leaved plants." What a lesson for young gardeners to turn up their noses at what "used to be!" When I broke the ice with fine-leaved plants not in bloom, for exhibition twenty years back, the what "used-to-be" people thought I was "stark mad." But look at the *Rhopalas*, and all the rest of them now! the trade in them, and how they "take" at the Exhibitions! Above all, look how high I get into the saddle writing about them wherever I meet them; and if I were on the sunny side of thirty, there are a dozen of new moves into which I would jump headlong, and carry them, as well as plants not in bloom, and fine-leaved plants, better than "our own Portugal Laurels."

Pulzeysia rosea, a new fine-leaved plant; *Rivenia laevis*, new, bright scarlet berries; *Ruellia grandiflora*, new, large violet flowers; *Saurauya mollis*, new, beautiful, extra fine broad leaves; *Stadmannia Jonghei*, the best of them; *Olmedia ferox*, majestic leaves; *Cupania* (? *Jacaranda*) *filicifolia*, just like an elegant Tree Fern; *Cupania glabra*, exceedingly ornamental foliage; *Cassia Skinnifolia*, free blooming, and golden yellow; *Æchmea miniata*, *discolor*, *spectabilis*, and *Milioni*, all four very strikingly handsome; *Æschynanthus fulgens* and *pulcher*, the best of them; *Aralia papyracea*, *leptophylla*, *farifera*, and *reticulata*, all with very ornamental foliage; *Amherstia nobilis*, down to five guineas at last; *Allamanda Paraguayensis*, and *Aubletia*, very large yellow; *Anæctochilus Eldorado*, *Lowi*, *cordatus*, *intermedius*, and *Veitchi*, the best of them; *Caladium picturatum*, *splendens*, and *marmoratum*, most beautiful; *Echites Houtteana*, one of the finest stove climbers; *Cossignia Borbonica*, fine leaved, with yellowish midribs; *Bromelia sceptrum*, spiny-leaved Pine Apple-looking, with stolons a yard long; *Bilbergia Moreliana*, and *thyrsoidea*, the best of them; *Dracæna ferrea*, *versicolor*, *fragrans*, *latifolia*, *maculata*, *nobilis*, and *Rumphii*, all of the handsomest kinds of Dragon trees; *Eucaris Amazonica*, the best stove bulb to bloom all the year round, and fully as easy to grow as *Agapanthus*, but is best in the greenhouse all summer; *Bertolonia marmorea*, better than *maculata*.

BEGONIAS.—The best of them are *Rex* (illustrated), *splendida*, *Saundersiana*, *zeylanica*, frosted foliage; *Billeteri*, another for the flower garden out in front of a greenhouse, deep rosy flowers all the summer; *Cinnabrarina hybrida*, fine; *Mortiana*, *multiflora*, *nitida*, and *n. coccinea*, the best old and new of that style; *Rosacea*, fine; *Roylei*, *Thwaitesi*, *argentea* (*Xanthina* breed), *Reichenheimi* (after Baron Hugel's late gardener), and *Picta Griffithi* (Hooker), have all ornamental foliage. Thus making the first and last two of the finest leaved in the genus, and no need to add older and well-known sorts. Every one put in this list is of the "best."

Exacum (genus near *Chironia*) *zeylanicum*, a fine thing; *Xanthosoma pilosa*, with white flowers, and fine large leaves, closely related to *Caladium*; *Theophrasta imperialis*, a really imperial leaf, which will easily propagate by the midrib, as all of them will do, and as I did them twenty and twenty-one years ago for the original collection of fine-leaved plants; *Thunbergia laurifolia*, with porcelain-blue flowers, as large as those of the new *Gloxinias*; *Rudgea leucocephala*, first reported from a meeting of the Horticultural Society, in Regent Street, with magnificent leaves, and "large bunches of pure white flowers;" *Gesnera cinnabarina*, one of Linden's introductions in the way of *Zebrina*; but "it is impossible to give any idea of the extraordinary splendour and richness of this plant," I suppose, by likening it to any *Zebrina* on the face of the earth; *Gesnera Donckelarii*, vermillion, and like the finest *Pentstemon* in shape of bloom; *Purpurea macrantha*, dwarf;

Zebrina excelsa, green, but veined with dark maroon; *Miellez*, long tube, lilac-purple flowers, like a *Gloxinia*; *Densiflora*, another fine thing; and *Blassii*, which blooms in winter, scarlet.

Allied to these is a new trailing, or basket *Achimenes*-like plant, quite new, in the way of *Achimenes cupreata*, but with glossy and silvery-shining leaves. It is called *Tapina splendens*, and is the same as *Achimenes splendens*. It is a brighter scarlet than *Tom Thumb*, and is more easy to grow and to propagate than *Tom Thumb* himself; and *Tom* is more difficult, and more expensive, to winter, than this most extraordinary beautiful plant for trailing down from a hanging basket, or for training up over a balloon.

Goodyera rubro-venia is a great improvement in the leaf on *discolor*. *Gomphia decora*, with racemes of yellow flowers; the best of the genus, and one of the best "bitters" in the Brazils. *Guzmannia picta*, which I often spoke of as *Nidularia fulgens*, a stumpy *Bromeliad* of striking beauty. *Hoya grandiflora*, white, in the way of *imperialis*. *Orbiculata*, new, with a round fleshy leaf. *Tysmanni*, also new, and with long fleshy leaves with the variegated kind, and *imperialis*, are the newest and best here; *Maranta regalis* is, perhaps, the best of them all—broad leaves with earmine stripes. *Vittata* and *Warcewiczii*, very good; but they are all beautiful in their illustrated foliage. *Ouvirandra fenestralis*, the lace water-plant from Madagascar, still keeps up its price, being at the same level as it stood this time last year. *Passiflora amabilis*, scarlet; *Gontieri*, sweet-scented; *Vitifolia*, another new scarlet; and *Schlimiana*, new and beautiful; are the best of what is new in Passion Flowers, as far as they have been collected to the Wellington Road Nursery.

There are two kinds of *Sansevieria zeylanica* (not *Javanica*).

Orchids. A select collection is grown just to the size of selling, and no more. Ferns of all degrees of temperature, and temptation to buy, on account of their lovely forms. I have slept on all kinds of beds, but, for the weary sportsman, commend me to a bed of Fern, if properly made, after a causer or two of Glenlivet!

Azaleas. The best of the American, or deciduous kind, for forcing is called *Taylor's Red*, a deep blush flower, with a crimson eye, very showy.

The Chusan Palm assumes a bold, stiff, upright *Chamerops*-looking aspect, and will make groves with us which will rival the *Chamerops excelsa* of the south of Europe. *Dasylyrion angustifolium*, a fine *Dracæna*-looking plant, with drooping leaves four feet long; a fine thing. *Seaforthia elegans*—Cabbage Palm of Australia—all but hardy; another fine thing. *Clianthus Dampieri* was coming into bloom in pots, and planted out in a cool house.

RHODODENDRONS.—The species from Sikkim and Bhutan have now taken their true shapes and habits, and look remarkably well; and they cultivate a large assortment of all the home-obtained crosses, both here and from the Continent. Among the latter is a new lot of Belgian beauties, said to be very good. One standard plant of the double Myrtle is four and a half by four feet. I should think the finest specimen of the kind on sale in this country.

Also collections and selections of all the hardy climbers, twiners, trailers, and creepers; Conifers, Roses, Phloxes, Perpetual and Tree Carnations; herbaceous plants, spring flowers, florists' flowers of all sorts, sizes, and shapes. Thus giving up the hall and the circle altogether; and thousands and tens of thousands of bedding plants, which, with Mr. Kidd's new system of cuttings, and Mr. Weeks's bottom heat by the rood and acre, would soon fill all the beds and borders in the three kingdoms.—D. BEATON.

FUMIGATION MADE EASY.

FIRST, as to the fumigating material. Buy some good leaf tobacco. Mind, leaf, not roll. Next, make "touch" of it. Every boy, whether he be a growing boy of fifteen, or a grown boy of thirty, knows how to make "touch." But as your lady readers may not be so wise, I will, for their sake, add, that the way to make "touch" is to take some nitre and dissolve it in warm water. About a table-spoonful of crushed nitre to a pint of water. Steep brown paper in this solution, dry it, and you have TOUCH. Now, instead of brown

paper steep the tobacco leaves in the solution, and then dry them. You have then "touch tobacco," which will burn rapidly, without fumigating bellows or any other implement of the kind.

The plan I follow is this:—I have an old flower-pot with a hole pierced through the side on a level with the floor. Then, inside, I have a piece of perforated zinc, to prevent the tobacco from falling to the bottom, and thus choking the draught of air through the hole. I place a couple of lighted matches on the perforated zinc, throw in the touch tobacco, rush out of the house, shut the door, and keep it so till the morning.

I have often tried, and succeeded, by laying the matches on the floor, and heaping the touch tobacco over them; but of all the plans I tried, the old pot is the best. I have just done it now, and I suppose that the time which elapsed, from my going into the house and leaving my fumigator in full operation, was not two minutes.

Some friends, to whom I have communicated it, have found it most useful as well as easy. The nitre evidently adds to the effect of the tobacco.—SIMPLEX.

THE HYACINTH SHOW AT EDINBURGH.

ONE of the most successful Floricultural Shows that the metropolis of Scotland ever produced, was held in the Music Hall, Georges Street, on Tuesday, the 23rd of March. The Society being in a position to offer liberal prizes, intending competitors were known to have been laying out all their resources and skill for the coming event. The result certainly shows, that the Scotch gardeners are amply qualified to maintain their reputation, when circumstances place them in an equal position with their neighbours. On this occasion they were brought into competition with Holland, the fatherland of bulbs, for thence were sent over some of its fairest treasures for exhibition, and the lion of London exhibitors—he whom no English grower dare ever "provoke with impunity"—confessed himself, this year, still more decidedly beaten, by Thomas H. Douglas, whose flowers showed a superiority of cultivation to any hitherto exhibited.

The number of Hyacinths sent was 532, nearly all of which were entered for competition. The general appearance of the Show was decidedly superior to that of last year; the whole having been admirably arranged under the immediate superintendence of Mr. Wm. Thomson, of the Palace Gardens, Dalkeith.

The first prize for eighteen Hyacinths, grown by nurserymen, was awarded to Thomas H. Douglas, Rosebank, Edinburgh, the varieties being—*Richardson*, *Mount Blanc*, and *Grandeur à Merveille*, single white; *Grand Lilas*, *Regulus*, *Canning*, and *Grand Vidette*, single light blue; *Baron Van Tuyll*, single dark blue; *Garrick*, and *Bloxberg*, double blue; *Mrs. H. B. Stowe*, *Madame Hodgson*, *Miss F. Nightingale*, and *Salfaterre* (very fine), single red; *Lord Wellington*, and *Unica spectabile*, single rose; *Susannah Mars*, double red; and *Prince Albert*, single black.

The second prize was awarded to Mr. Cutbush, of the Highgate Nurseries, London. The finest specimens in his collection were—*Monsieur Feaseh*, single red, always fine; *Duke of Wellington*, double rosy-blush; *Charles Dickens*, single blue; *Prins Van Sax Weimar*, fine single dark blue; and *Dolly Varden*, single white.

The above, along with the following, selected from amongst all the collections, will give a general idea of the best varieties exhibited: *Laurens Koster*, double dark blue, very fine; *Financier Royal*, single red; *Emicus*, single dark blue; *Amy*, *Cavenac*, and *Chapeau de Cardinal*, single red; *Milton*, and *Blue Mourant*, fine single blue; and *Pucelle d' Orleans*, single white.

Next to the Hyacinths, collections of twelve Rhododendrons, in ten-inch pots, formed the most important feature of the Show, and were exhibited in splendid condition, in Mr. Methven's collection, of Stanwell Nursery, who gained the first prize. We noticed *Grand Arab*, a very striking variety, the trusses immensely large, brilliant scarlet, quite a rival to the celebrated *John Waterer*; *Rembrandt*, fine lilac-erimson; *Blandyana*, scarlet; *Jacksonii*, rose by being forced, usually scarlet; and *Melanthuma*, fine large dark crimson.

Messrs. Cunningham, Fraser, and Co., Comley Bank, who

were awarded the second prize, were scarcely a hair's-breadth behind their more formidable rival, indeed the Judges themselves admitted that their decision rested in favour of colour, there being an over proportion of light varieties. The following were conspicuous in their collection for fine trusses, and perfect shaped flowers—*Nobleanum album major*, *Jackmanni*, rosy-crimson; *Fulgens*, scarlet; *Albertus*, rose, a fine sort for spring forcing; *Florence Nightingale*, white; *Sir I. Newton*, cream-colour; and *Mars*, scarlet.

Indian Azaleas were shown in tolerable condition, but, excepting two neat plants of *Lateretia alba superba*, and *Stanlyana*, they were not so well bloomed as they usually are in the south. Hard-wooded plants seldom flower so profusely in Scotland, even with an equal amount of care, as they do in the middle and south of England, owing, we presume, to a cloudy atmosphere, which prevents their ripening sufficiently. Cape Heaths were not numerous, but well-grown, and nicely bloomed. We observed fine specimens of *Melanthera*, and *Colorans superba*, from Dalhousie Castle, and a splendid *Lindleyana* from Parsons Green.

As a new feature in harmony with the Exhibition, prizes were given for the best twelve hardy-spring bulbs shown in pots. The word *grown* having been omitted from the Society's Schedule. Many of them were, in reality, *hardy*, for they had been taken from the open ground, and potted in the morning.

Be that as it may, the collection presented by Messrs. Cunningham, Fraser, and Co., which gained the first prize, was certainly an interesting one, they consisted of *Narcissus minor*; *N. minima*; *Bulbocodium vernal*; *Scilla Siberica*; *S. præcox*; *S. bifolia*; *S. bifolia major*; *S. bifolia flore albo*; *Crocus striatus*, a scarce variety; *Leucojum vernal*; *Cyclamen ibericum*, and *C. ibericum flore albo*. Amongst cut blooms of Camellias, *Saccocoinova* was one of the best; *Storeyii*, *Frostii*, *Hendersonii*, *Queen Victoria*, and *Countess of Ellesmere*, were also very fine; the old double white *Fimbriata*, and *Imbricata*, were in every stand, and always good.

There was a spirited competition for ladies hand bouquets, the best of which came from Mrs. Carstairs, Warriston, being a perfect specimen of artistical skill, but much too large for the purpose implied.

A number of magnificent greenhouse plants were sent for exhibition, by Mr. Lockhart, Arniston, consisting of gigantic specimens of Cape Heaths. *Acacia prostrata*, ten to twelve feet in circumference, loaded with flowers; and a noble plant of *Pultenea subumbellata*, which we had occasion to notice last year.

The entrance to the hall was again occupied by nurserymen's stalls for the display of horticultural implements, seeds, &c. Gardeners have thereby had an ample opportunity, on two successive occasions, of making themselves thoroughly acquainted with the contents of the seed shops, which, doubtless, the Committee will consider sufficient, so as to occupy the space next year with something more really instructive, and in better harmony with the rest of the Exhibition.—JAMES RAE, Edinburgh.

WATERING CUTTINGS IN SAND AND WATER.

I HAVE been trying the "Kidd" plan of striking Fuchsia cuttings, and have made a little discovery which may be found useful. To keep the sand moist without displacing the cuttings, invert over the saucer a basin of sufficient diameter, to leave a margin between it and the saucer. By pouring a little water in the narrow margin you can keep your sand damp without furrowing it into holes, displacing your cuttings, or wetting the leaves.

I find a bellglass a good addition to the "Kiddion" system.—GLADIOLUS.

FILBERTS.

I AM now looking over the number of THE COTTAGE GARDENER for December 1857, and at page 206, I find "L. S. G." states that he is unfortunate with his Filberts, and, in reply, you say that if they are more than twelve feet, they are not productive. Now, I have two rows of them twenty feet high, and I gathered 46 lbs. off one tree this last year, and

they were first-rate nuts. I took a dish of them to our Show, and had a second prize. Now, I should like to know whether you call that a good crop?—MONTGOMERY.

[We need scarcely say that we consider 46 lbs. a good crop for one Filbert-tree; but is not this an exception, not the usual produce? We never knew Filbert-trees uniformly good bearers. The most regular and certain croppers are Filbert bushes.—ED.]

DESTROYING GOOSEBERRY CATERPILLARS AND RED SPIDER.

As the time is fast approaching when the Gooseberry caterpillar will attack the bushes, I beg to make known, through the medium of THE COTTAGE GARDENER, a method of destroying them, which I have practised for upwards of twenty years, and for efficacy and cheapness quite supersedes any other agent, both for the destruction of the caterpillar and red spider on the Gooseberry bush, without injuring the blossoms or the leaves, if not made over-strong.

Get a tub that will hold 25 or 30 gallons; put into it 2 quarts of tar, and 7 lbs. of common washing soda; pour a few gallons of boiling water on it; stir it until the soda is dissolved, when the tar will mix with and be held in solution by the water; then fill the tub full of cold water, and it is fit for use.

When the caterpillars are only a few days old, the solution will do much weaker; but when nearly full grown, make it a little stronger. I use a syringe perforated at the side instead of at the end, in order the more effectually to wash the undersides of the leaves. Bushes that are infested with red spider are best washed with a watering-pot and rose, about the middle of a fine day, when the insects are on the tops of the leaves.

Farmers, I think, might catch a useful hint here. Would not the above liquid, if used for bathing sheep, be equally as good, and much cheaper than the various preparations used for that purpose?—J. S.

HORTICULTURAL SOCIETY OF EDINBURGH.

UNDER this title a new Society for the promotion of gardening has been organised at Edinburgh. Besides honorary and corresponding members, it has four classes of subscribers, paying annually, 21s., 10s. 6d., 7s. 6d., and 2s. 6d. The last is confined to "garden assistants of all ranks, mechanics, and cottagers."

We wish it every success, and hope that it will stimulate the Caledonian Society to an exertion, which may rescue it from that death to which it seems gradually declining. We are told, at all events, by a correspondent, that "the new Society is intended to supplement the efforts making by the Caledonian Society. From some cause or other the Caledonian has been retrograding, and it purposes to have a Show only in May and June. By this purposing, if no other agency was at work, there would be in the Scotch metropolis no Show of autumn flowers nor fruits, which certainly ought not to be neglected. The nurserymen and all the head gardeners round Edinburgh are friendly to the movement, and the new Society has got the Earl of Rosslyn as President, and a general Committee of fifty dealers, practical gardeners, and amateurs, beside a working Committee of thirteen. Dr. Geo. Lawson is Secretary."

This is a good example, and we should not wonder if some member of the Pomological Society were to propose an enlargement of its basis, "to supplement" the Horticultural Society of London.

FERNS AND FLOWERS AT BALLYMAHON.

I HAD intended sending you a frond of what appears to me a gigantic specimen of *Ceterach officinarum*, but finding that the very few I had have all been distributed among friends, I must confine myself to a description of it, trusting it may be intelligible. First, let me tell you, that in this immediate neighbourhood the Scaly Ceterach is extremely rare; and,

where it has been found, always extremely small and stunted, though about twenty miles off, on the other side of the Shannon, it grows in great luxuriance at Mote Park, the seat of Lord Crofton. The largest frond, however, that was ever found at Mote Park is not one-fourth the size of the one I am alluding to, and of which I send you a slight sketch. It was found by my daughter in an old-ruined tunnel, not half a mile from our cottage, and in a spot singularly devoid of Ferns. Though not eleven years old, she detected at once that it was to her "new," and carefully brought me home the entire plant, which unfortunately is but small. If you can make anything out of my sketch, you will see that the edges of the leaflets are wavy, very scaly at the back, and in every way resembling a Ceterach. Pray tell me if you know it.

I do not know whether the Bladder Fern is common in England; here it is very rare indeed, but my friend Mr. S. Edgeworth (after whom *Rhododendron Edgeworthi* was called) told me the other day, that he had just met with it growing abundantly in the chinks of the stone steps at Sanna Hall, about ten miles from me! How it got there is to me a mystery.

As to our doings here I cannot tell you much as yet, for it is not more than a week since the ground was covered a foot deep with snow. Since then, however, a summer-like weather has set in quite on a sudden; the sun shining so brightly, and with such force, that I seldom found it hotter in August than it was to-day, when I went over to my friend the Doctor, to see if I could pick up any news for our friends in England.

I found the little man in great good humour; he said it was just the right weather for his Orchids, which are in full growth now, and require plenty of heat and moisture. The sun supplies the one much better than fire (not to speak of economy), and the syringe does the other, whilst a few yards of calico keep off the glare.

The only new beds he had were two, one made with common pink Hepatica, surrounded with a band of a peculiarly white Crocus; the other made with blue Hepatica in the centre, a yellow Crocus all round: this last was beautiful. He was preparing his bed of concentric rings, of Primroses and Violets, but seemed doubtful as to its success, as the Primroses were so very much in advance of the Violets. I strongly recommend you the blue Hepatica, with the yellow Crocus for a border; this last about a foot wide; it makes a truly gorgeous bed.—ITALICUS.

[*Ceterach officinarum* is such a remarkable Fern that it cannot be mistaken for anything but what it is; there is not the least doubt but the specimen "ITALICUS" speaks of is the Ceterach, or Scaly Spleenwort. The situation where it was found would readily account for its vigorous growth. We have fronds which have been gathered wild, of various lengths, from two inches to six inches in length. A friend sent us specimens, found wild in Devonshire many years ago, somewhere near the sea, and also fine specimens of the *Asplenium marinum* at the same time; and we have seen the Ceterach in a growing state, established in the border with its fronds, as fine as those spoken of by "ITALICUS."

The common Bladder Fern is frequently met with in a wild state in England: in the light, rich soil of a shady border it flourishes admirably.]

A SWARM IN THE STOCK'S PLACE.

SEEING the subject of placing swarms where the old stocks stood is deservedly exciting some interest in your pages, I send you the result of an old bee-keeper's experience in this matter. I was indebted entirely, and I believe every one else is, to the "COUNTRY CURATE" for the idea, some six or seven years ago. I have never had a second swarm when I have removed the old stocks to the distance of one hundred yards, and I have removed as many as six in one year; but when I have shut up the old hive for the day, and placed it in the evening about four feet off its old stand, now occupied by the swarm, as advised in the "COUNTRY CURATE'S" book, my success has been very indifferent. This I attribute to the bees finding their old home out.

When successful, it has no such result as "reducing the old stock to an useless skeleton;" but, on the contrary, after a week or two, it becomes far stronger than it ever would have been, had it swarmed twice; and, in my case, I scarcely

ever fail in getting a well-filled six or seven pound cap off by the end of the season—a result not to be hoped for, in our county at least (Yorkshire), from a hive having thrown off a second swarm. We only care to have first-rate top honey for our own use, and to make presents of; and one of these seven pound caps is more valued by us than a whole *hive* full of honey that requires to be run.

The excision of royal brood is anything but a “physic certainty” in preventing *first* swarms, for I cut out four every year of Taylor’s hives, and then *immediately* return the swarms that have come out; but they often conoeet another queen, and give me the trouble over again by coming off again. Barring the trouble, however, and, if not properly protected, the danger, it is a famous plan to secure a large quantity of first-rate top honey.—J. GRANT.

ONCIDIUM PANCHRYSUM.

NATIVE country, New Grenada, in the province of Socorro, according to M. Linden’s “Herbarium,” No. 1432.



A small species, with an erect branching panicle of pure yellow flowers. From the roots to the top of the panicle is not much more than a foot, even in the wild specimens. The leaves are about six inches long, erect, obtuse, and as high as the stalk of the panicle. Among the peculiarities of the plant is the presence of two little patches of fine down at the very base of the lip where it comes in contact with the column. It belongs to a group, of which the well-known *Oncidium pulvinatum* may be taken as the representative.—(*Horticultural Society’s Journal*.)

FLORISTS’ FLOWERS.

THE FUCHSIA.

THE plants for early bloom should now be growing freely; care, however, must be taken not to force them too fast, or they will be thin of shoots, and rush up too tall, so as to have a spindling-leggy habit. Give plenty of air, and water frequently with liquid manure. Young plants should be re-

potted every four weeks, and the leader should be stopped to cause the lower buds to break. The best form is that of a pyramid. I saw some plants in that shape exhibited by Messrs. Fisher and Holmes, at Sheffield, last summer, that were perfection itself. They measured two feet and a half across at the base, and gradually shortening in to the top, which was only three feet from the pot. I have seen none so well and symmetrically trained, even at the London Exhibitions. Let every grower strive to come up to this standard of culture. They were equally as well bloomed as they were grown and formed. Cuttings may yet be put in, and as soon as rooted potted off and grown on vigorously, repotting them, and stopping, &c., till they bloom. Such late-struck cuttings form the handsomest plants in September, when there are few other kinds of plants in flower to ornament the greenhouse and conservatory.

There are not many new ones to come out this year. I suppose it is now difficult to improve on the many fine varieties already in cultivation.

NEW FUCHSIAS.

Guiding Star (Banks), blush white tube, tinted with pink, rich violet corolla, the sepals well reflexed; a novel and truly fine variety.

Prince Frederick William (Banks), bright carmine, red tube and sepals; the latter are bold, wide, and well reflexed; very large and fine; distinct and good.

Princess of Prussia (Smith), crimson tube and sepals, pure white corolla; very free bloomer and good habit. (10s. 6d. each.)

SELECTED OLDER VARIETIES.

Catherine Hayes (Banks), scarlet tube and sepals, corolla light blue; a well reflexed and free blooming variety.

Emperor Napoleon (Banks), deep scarlet crimson, tube and sepals well turned up, corolla deep violet.

Etoile du Nord (Banks), deep scarlet sepals and tube, corolla black violet; very fine.

Little Bo-Peep (Banks), scarlet tube and sepals, violet corolla.

Princess Royal (Veitch), rich scarlet tube and sepals, well reflexed, white corolla; the best of its colours.

Queen of Hanover (Banks), pure white tube and sepals, carmine corolla; very free bloomer.

Queen Victoria (Story), scarlet crimson tube and sepals, well reflexed, clear white corolla.

Souvenir de Chiswick (Banks), tube and sepals rosy crimson, finely reflexed, and of a great width and length, corolla deep violet; large and conspicuous.

The Bride (Turner), pure white tube and sepals, corolla rich pink.

The Fair Oriana (Banks), sepals and tube pure white, corolla bright scarlet, tube stout, round, and glossy, the sepals well reflexed.

The Little Treasure (Banks), scarlet tube and sepals, well reflexed corolla, large, open, and of a violet colour.

The Silver Swan.—Tube and sepals white, large rosy corolla; superior to the old favourite, the *Duchess of Lancaster*.—T. APPLEBY.

CUTTING BOXES.

AFTER all Mr. Beaton’s instructions, our friends are, of course, dab hands at making cuttings either from bud-leaves, roots, leaflets, off-shoots, flower-stems, or by the old-fashioned method. To such, the following description of a simple, inexpensive, and durable plant box will, no doubt, be acceptable.

Provide two pieces of quarter-inch deal or oak, nineteen inches by three inches and a half; and two nine inches by three inches and a half. Join these with brads at the edges, thereby forming a rectangular frame. Each frame is placed on a countess slate (twenty inches by ten inches, price 3d.), and removed to a table in the forcing house.

When the young plants are in condition for potting off, fill your plant boxes with suitable soil, and transfer the juveniles from the cutting-pots, where (owing to good drainage and abundance of room) they flourish famously. Bedding-out time arrived, you will be astonished at the facility of removal.

Take hold of each frame by its long sides, and with a slight upward jerk you will be able to remove it entirely, leaving a perfectly rectangular block of cuttings on the slate. Each slab is in its turn carried off to the beds, the mass divided with a trowel, and the plants set out; the boxes and slates being stowed away till next season, without fear of breakage. In practising this plan we find the following advantages:—

The roots do not get matted.

There is less difficulty in watering.

Great saving of space, and absence of a multitude of smashable little pots.

Though space is economised, each plant has a larger proportion of rooting room, than by the old system.

Reduction of work is particularly noticeable during the bedding season, when time is valuable.

Instead of carrying six plants at a time, sixteen or more can be transported with safety.

Some of our readers may have adopted boxes with fixed wooden bottoms. These are preferable to pots, but—besides far greater durability—those described above are manifestly superior in all respects.—EDWARD A. COPLAND, *Chelmsford*.

P.S.—At a time when wild flowers are scarce, we have a magnificent bouquet from the poor-man's-garden now gracing our table. It consists of a glass dish filled with mould, in which twigs are fixed covered with the scarlet cups of *Peziza coccinea*. The whole imbedded in feathery mosses, and covered with an inverted bellglass. These present a gorgeous spectacle. The brilliancy of the scarlet (a colour not to be imitated) contrasted with the varied green shades of the moss is most effective. Some of the bells are more than an inch in diameter. I should not have mentioned this, but no one here seems to have been before aware of the existence of a beautiful plant which, in the warm room, has retained its splendour for a fortnight.—E. A. C.

ZYGOPETALUM BRACHYPETALUM.

THIS species was originally brought into notice by Mr. Waterhouse, of Halifax, in the year 1840, and is little known.



It is one of the handsomest of the species, having brownish sepals and petals, a little marbled with green, and a deep bluish-violet lip veined with white. The crest of the lip is clearly striped with blue, and the column is streaked with dull dark purple. M. de Jonghe states that it had been found by his collector Libon, in 1847, on the Peak of Itabiri, in the province of Minas, in Brazil.—(*Horticult. Society's Journal*.)

BLANDFORDIA GRANDIFLORA.—At the meeting of the Australian Horticultural Society, which met at Sydney in February, two specimens of the *Blandfordia grandiflora* were exhibited, and attracted some attention. This plant grows five feet high, and is to be obtained on the mountains of Wollombi.

NOTES ON NEW OR RARE PLANTS.

ENKYANTHUS RETICULATUS. *Lindl.* Nat. ord., *Ericaceæ*.—Native of China. Stem shrubby, branching irregularly. Leaves alternate, on short petioles; obovate, acute; veins beautifully reticulated, smooth, coriaceous, dark green. Inflorescence terminal; umbellate, bracteate. Bracts linear, lanceolate, red. Peduncles long, deflexed, smooth, dark red. Calyx divided into five short, acute teeth, smooth, red; closely adhering to the base of the corolla. Corolla campanulate, with five brightly transparent nectaries at the base. Limb of five short, obtuse, reflexed segments; beautiful pale rose colour. Stamens ten, with thick subulate filaments. Style also thick, surmounting an ovate, green ovary.

An old and most desirable species, and but rarely met with in private collections. The reason of this is difficult to conceive, as the plant is superiorly adapted for decorating the greenhouse or conservatory at a very dull period of the year; its time of blooming being winter, and it is by no means difficult of cultivation. Turfy peat two parts, good light loam one part, and plenty of sand to render the whole free and open, form the most suitable compost. The drainage must be very perfect. It might succeed very well planted out in a cool conservatory. Propagation by cuttings is a slow operation, but if they are made of the young wood, partially ripened, they will succeed pretty well. They must not, however, be excited with heat.

ACACIA ARGYROPHYLLA. *Hook.* Nat. ord., *Leguminosæ*.—Native of the Swan River, and introduced into this country by Mr. Drummond. Shrubby, compact in habit; about three or four feet high. Branches angular; the younger ones covered with fine silky down. Leaves (phyllodia) alternate, on short petioles; obtusely obovate, or oblong; margins swollen; both surfaces covered thickly with close, shining, silvery down. Inflorescence in axillary, globose heads. Peduncles short, usually bearing two heads of flowers each. Stamens very numerous, of a rich yellow colour.

One of the most distinct and beautiful species of this deservedly popular genus. Fine foliage, compact habit, and profusion of richly-coloured flowers, at a season when such are particularly valuable, because scarce, are points of superiority rarely possessed by individual species of any genus, in the high degree represented in this one. Good, strong, fibrous loam, with a little peat and sand, are the compost it prefers. Propagation effected by cuttings of the young wood, and by seeds. It blooms in February, March, and April; also, not unfrequently in the autumn months, when it continues throughout the winter to flower more or less profusely.

GOLDFUSSIA ISOPHYLLA. *Nees.* Nat. ord., *Acanthaceæ*.—Native of the East Indies. Introduced by Dr. Wallich. Compact dwarf shrub. Branches slender, quadrangular; swollen at the joints. Leaves opposite, narrow, lanceolate, much attenuated both at the base and apex; margins distant and slightly serrate; smooth, dark green. Inflorescence axillary. Peduncles short. Bracts several, placed near the base of the calyx; small, green, ciliated. Calyx small, divided into four or five ciliated segments. Corolla funnel-shaped, deflexed, plaited; limb divided into five reflexed lobes, emarginate, pale blue. Stamens four, two long and two short. Style awl-shaped.

Not a very striking plant, but desirable, on account of its free, winter-blooming quality. It is best suited with a compost of a loamy nature, rich, and not stiff in texture. Easily propagated by cuttings.

ACACIA RICEANA. *Hensl.* Nat. ord., *Leguminosæ*.—Native of Van Diemen's Land. Shrubby, erect, about three feet high, with slightly pendulous branches. Leaves alternate, spreading horizontally, subulate, thick, rigid, mucronate, very dark green. Flowers in solitary and axillary spikes. Peduncles about an inch in length, each bearing several flowers. Calyx divided into three or four segments; obtuse. Corolla of three or four petals, larger than the calyx. Stamens very numerous, pale yellow.

A very desirable species, blooming freely in March and April. It prefers a good loamy soil, with a little peat and sand, and with attention to stopping, and tying-out, can be made very handsome. Seeds, which it produces freely, are the least troublesome, and surest method of propagation.—S. G. W.

PLANTS IN BLOOM DURING MARCH, OUT OF DOORS, AT KEW.

RANUNCULACEÆ.—*Hepatica triloba*, *H. triloba cœrulea*.
 CRUCIFERÆ.—*Thlaspi latifolia*, *Arabis alpina albida*, *Ambrosia deltoidea*, *A. deltoidea purpurea*.
 LEGUMINOSÆ.—*Orobis vernus*, *O. flaccidus*.
 DRUPACEÆ.—*Amygdalus communis*, *Prunus divaricatus*.
 BORAGINACEÆ.—*Nonea lutea*, *Pulmonaria grandiflora*,
P. rosea, *P. officinalis alba*, *P. officinalis maculata*.
 OLEACEÆ.—*Forsythia viridissima*.
 SAXIFRAGACEÆ.—*Saxifraga crassifolia*.
 LABIATÆ.—*Rosmarinus officinalis*.
 VIOLACEÆ.—*Viola collina*.
 SCROPHULARIACEÆ.—*Veronica cristagalli*, *V. micrantha*.
 AMARYLLIDACEÆ.—*Narcissus propinquus*, *N. compressus*,
N. cupularis, *N. nanus*.
 LILIACEÆ.—*Puschkinia scilloides*, *Gagea lutea*, *Hyacinthus orientalis*, *H. orientalis aureus*, *Scilla bifolia*.
 IRIDACEÆ.—*Iris persica*, *I. tuberosa*, *Sisyrinchium grandiflorum*.

THE MARINE AQUARIUM.

THE impression conveyed to my mind, on the perusal of the remarks on "Sea Flowers," from the pen of "S. H.," in THE COTTAGE GARDENER of March 9th, was, that his experience of the management of the marine tank extended over only a very limited period; but, from a second article (March 23rd), on "Stocking the Marine Tank," I find he has devoted a period of more than three years to this study. I am, however, of opinion, this has taken more of a theoretical than a practical turn; for, after all, he remarks that some of his animals, *Sagartia anguicoma* to wit, "has one bad habit: it will frequently let go its foothold, and lay prostrate on the pebbles, so that the slightest agitation of the water will spin it into some crevice among the rockwork." This is, indeed, a bad habit, and the more so, if the means for cleansing the tank are to be after the fashion recommended by "S. H."

Surely, any such violent commotion of the water must be inimical to the perfect management of the whole affair; one great desideratum is to have the water of the most sparkling brilliancy. Taking the water up a jugful at a time, and dashing it back, must be prejudicial to this effect, as well as to the health of the animals themselves. The verity of the old adage, "that the proof of the pudding is in the spending," will hold good in this case; and although my experience has extended only over a period of about eighteen months, I have never had to contend with the animals becoming detached from their foothold, and with a simple mode of removing the exuvie thrown off by the animals, I have met with very encouraging success. I shall be pleased, if from a description of the plan I have pursued, for the removal of any refuse ejected from the animals, in lieu of the "violent commotion," any of your aquarium readers should pursue this interesting study with greater zeal and facility of management.

As soon as I discover any deposit, or sediment, I take a glass tube about half an inch in diameter, and two feet in length, and pressing my finger tightly over one end, I put the other end to the sediment (during this time the confined air prevents the admission of the water into the tube); I then, for a moment, remove my finger, and suddenly water and refuse matter rush in, and by tightly replacing the finger, I am enabled to remove all contained in the tube to a dripping-glass suspended over the tank, with a piece of sponge firmly fixed into the hole, to filter the water; at the same time I add sufficient water to supply the evaporation, and re-adjust the gravity bead. In my tank, containing about twenty-five gallons of water, I am able to keep upwards of a hundred specimens in perfect health, without artificial food or other aëration. I have lost specimens of *Anthea cereus*, and other very delicate varieties, if I have only made the water turbid, by removing or altering the position of the rockwork; but the most tender kinds seem to appreciate the adoption of the plan with the glass tube. It requires to be practised about once in a week or ten days. It produces a slight motion on the water which, with that kept up by the evolutions of a few prawns and periwinkles, is generally beneficial.

"S. H." observes that "*Sagartia bellis* bears the most

perfect resemblance to a flower; this and *Bunodes clavata* require the water to be kept very pure. A few days neglect of the vessel may result in their death, and the general breaking up of the collection." My stock contains both varieties, at least twenty specimens of *bellis*, it being my greatest favourite, and best calculated to endure a life of confinement. Some have been in my possession for eighteen months, and have been kept in the same water; after taking up suitable positions, they have never removed; by the time they had been in the tank six months they gradually erected themselves on their slender stems, some of them now raising their lovely disks at from two to three inches from the rock to which they are attached; and, to the casual observer, bearing a close similitude to a delicate fungus. They exhibit the most beautiful and fancied tinting; the best specimen, I believe, being obtained on the south-western coast. The choicest specimens I have were supplied me by Mr. King, of Torquay, of whom, also, I procured three varieties of the delicate *Corynoctis*. These latter are considered very rare, and I have never seen them in any collection, except those derived from the same source. Although I am residing many miles from the sea, it has in no way militated against my success; having imported, at starting, about thirty gallons of sea-water, I surmounted the greatest difficulty.—£.

[We shall be obliged by the communication of the further results of your experience.—ED.]

A DESCRIPTIVE LIST OF POTATOES.

(Continued from page 399, Vol. XIX.)

FORTYFOLD.—This is an old-established favourite: a very good early variety. About sixteen years ago, while living at the Marquis of Camden's Wildernes Park, I remember this variety was a great favourite. It was extensively cultivated there, and produced enormous crops. It is a smooth, round, mottled Potato, of good size, excellent boiler, and not over luxuriant haulm.

BRITISH QUEEN.—This variety is called by some the *White Fortyfold*. It is an early round white variety, good cropper, middle size, tolerable even eye, and moderate haulm. I do not consider this a distinct variety.

PURPLE ASH-LEAVED KIDNEY.—This variety is an enormous cropper, very large tubers, smooth eye, moderate haulm. When boiled, yellow, close, and waxy; not good flavoured, but a showy Potato for exhibition.

RED ASH-LEAVED KIDNEY.—This is a much better flavoured variety than the above, tubers not so large, and in some soils a bad cropper, eye even, with dark short haulm. This variety, in consequence of its colour, looks well when exhibited in a collection.

ASH-LEAVED KIDNEY.—This variety scarcely requires any comment, being well known to nearly every one; but there are now many varieties of the so-called *Ash-leaved*, some much better croppers than the old original varieties, so that it is difficult to get the true one. It is one of the very earliest and best for frame culture; good flavoured while new, very short haulm, and should be encouraged to sprout before planting.

EARLY AMERICAN, OR AMERICAN SEEDLING.—This variety resembles the *British Queen*, not quite so early, but is equal to it in every other respect.

PRINCE OF WALES.—I believe sent out by Mr. Wheeler, of Gloucester. I have only grown this variety one season; it is a very excellent variety, something in appearance like the *Early Oxford*; very early, productive, good boiler, rough skin, moderate size, and not a strong grower.

YORK REGENT.—This very highly esteemed variety is the best for general crop; but the difficulty is to get it true. As a proof of the excellence of this Potato, I need only say it is preferred at the principal club-houses to any other variety, and always maintains the highest price in the market. It is a good cropper, tolerable good eye, moderate haulm, excellent flavour, very white and mealy when boiled or baked.

SCOTTISH CHAMPION.—This variety resembles the above; is quite equal in every respect; and, in some soils, a very productive variety. Other varieties of Potatoes have been sold by the above name. In consequence of the high price it

sold at, three years since, it was let out by Mr. Chillingworth, of London.

THE ALMA is a cross between the *Ash-leaved* and *Lapstone Kidney*, raised in this neighbourhood. It partakes of the earliness of the former, and productiveness of the latter. It is a full-sized *Kidney*, even eye, good flavour, and short haulm. I have exhibited this variety very successfully.—

EDWARD BENNETT.

(To be continued.)

NEW AND RARE PLANTS.

CALANTHE DOMINII (*Dominy's Calanthe*).

This hybrid was raised by Mr. Dominy, foreman to Messrs. Veitch and Son, at their Exeter Nursery. He is the first recorded raiser of hybrid Orchids. It is a cross between *Calanthe masuca* and *C. furcata*.—(*Botanical Magazine*, t. 5042.)

NIPHŒA ALBO-LINEATA var. RETICULATA (*White-lined Niphœa*, netted variety).

A variety still more ornamental than the species.—(*Ibid.* t. 5043.)

CAMELLIA ROSÆFLORA (*Rose-flowered Camellia*).

A species with single, pink flowers, growing in the Kew Gardens. Its history not known.—(*Ibid.* t. 5044.)

PENTSTEMON JAFFRAYANUS (*Mr. Jaffray's Pentstemon*).

Discovered by Mr. Jaffray, at Clear Creek, North California, in 1853; and introduced since by Messrs. Veitch, through their collector, Mr. W. Lobb. Flowers bright blue and red. Blooms in August.—(*Ibid.* t. 5045.)

KEFERSTEINIA GRAMINEA (*Grass-leaved Kefersteinia*).

An Orchid, native of Popayan, on the west side of the Andes.—(*Ibid.* t. 5046.)

BEGONIA WAGENERIANA (*Mr. Wagener's Begonia*).

A native of Venezuela, introduced by Mr. Wagener to the Royal Botanic Gardens at Berlin. White flowers with yellow centres, but its crimson leaf-stalks are its greatest attraction.—(*Ibid.* t. 5047.)

THE CRYSTAL PALACE GARDENING.

A PUBLIC institution would lose half its value if the public were not allowed every opportunity of criticising its merits or management. This liberty is so universally allowed, that I make no apology for making a few observations on the Crystal Palace flower gardening, as well as other matters connected with its interior arrangement. The garden and fountains especially, being that portion which falls under our own immediate notice; and they being on that extensive scale not met with elsewhere; besides being, as everybody knows, only the creation of the last three years, it is reasonable to suppose that the most recent improvements, as well as all that was beautiful in antiquity, might be here blended in accordance with the refined taste of the present time that was brought to act upon it. That much has been done that way, no one will deny; in fact, it seems the general opinion, that in the principal outline it could not be well improved; while in some of its details there is room to find fault—at least there are some parties who think themselves entitled to do so; while, perhaps, some others may have taken an opposite view, which is probably the best compliment that can be paid to what has been done. Be this as it may, I think it will generally be admitted that the first terrace, a plain gravel one, next the building, is rather narrow for everything else connected with it, as a good spacious area at the base of so lofty a structure was certainly wanted, and the present one is assuredly deficient that way. I give this, however, as my only objection to what has been done in the ground works: everything else seems too good to comment upon, in so far as regards the formation; the planting will be mentioned afterwards. The fountains being a very prominent feature in the place, and as everybody has had something

to say of them, and, I believe, all in praise of them, I ought not to say anything amiss. However, I cannot help repeating the same remark I made while they were building—that to work them well would take half the water of the Thames; and I think this opinion must be borne out by the fact, that the Company are only able to work a part of them about fifteen minutes every day, and that after a great expenditure of money and material. That they are noble specimens of art I will and must admit, but not better than I expected; and when seen from the upper galleries of the building they do not look well; and, taken as a whole, they certainly do not excel those at Versailles, the sculptural embellishments of the latter giving them so decided an advantage. Nevertheless, they look well; and were water more abundant, so as to work them more, they would be more attractive: but as it is, I expect the Company have a difficulty in supplying them with water sufficient to enable them to play so long as they do; and I have no doubt but the "waterworks" have been, and will continue to be, very expensive affairs. However, I hope a generous public will patronise the palace and garden to an extent that will ensure their prosperity, as so vast an undertaking has a claim on the nation at large: and the many useful ideas that may be obtained by inspecting the various objects of art, give it considerable value when we come to consider the very reasonable rate at which such insight can be obtained. Flower gardening, on an extensive scale, is there exhibited in a way we might have searched the whole world over for only a very few years ago. That the plan of the gardens or their details are anything new I think no one will affirm; but the combination of forms seen at other places, and the whole united in so harmonious a manner, are equally as creditable to the designer, as if the whole thing had been original in all its parts.

To the systematic florist the Crystal Palace gardens afford but little that is interesting. Dahlias and Carnations, surrounded by stakes and shading, are countenanced by so very few, as to be out of place there; but to the admirer of flowers generally and the enthusiastic flower gardener there is much to learn: the former is pleased with the general display, and the latter learns a wrinkle from the plants he sees made use of. I often think, that young men from distant parts of the kingdom might make it their business to visit this garden now and then to see what is going on; for, though there may not be scores of beds of the last new Verbena, yet it is likely that there are a great many of some one but little inferior to it: and I must confess I have never seen any quantity of beds so well managed elsewhere. But as the details of their treatment often appear in your pages, I need not repeat them here, but invite all the distant members of our craft to go and see it, and judge for themselves. It certainly would be better if they could do so in summer; but even in winter they might possibly see something equally useful: and as there are often cheap trains from the provinces to London, it would be worth while to spend a week in and around London, not forgetting to visit Kew Gardens, and that at Hampton Court; and if these were seen before the Crystal Palace, the advance the latter has made would be apparent.

On looking over the grounds at the Crystal Palace the eye is pleased to notice the simplicity of the forms of the beds. I should think full two-thirds of them are plain circles, and most of the others are parallelograms, with rounded or with concave ends. Scrolls and fancy irregular figures are very scarce, and standard Roses few and far between. The most ample space of green turf is left untouched, so as to obviate all appearance of crowding, even when the eye is but little elevated above the line of sight; and shrubs and ornamental trees are but thinly scattered about except at the boundaries, where irregular belts conceal the grounds from being overlooked by public roads, &c. In accomplishing this, care has been taken to secure important views untouched from the principal points they are seen from. The planting of such belts is done in the usual way, and with the usual materials, and now and then a rustic or novel object is run against in perambulating the boundaries; but these objects are not so numerous as to be intrusive; and care has also been taken to avoid the grotesque or burlesque, so often run into by introducing unmeaning objects.

When I visited this public garden I had no intention of recording what I saw, and consequently took no notes of the various objects of interest; but, as you kindly invite contribu-

tions from others, I venture to hand you my opinion of the general features of this vast place, which may, perhaps, be the means of inducing some distant gardener to visit it, and to judge for himself. At the same time I must admit, that though everything I saw outside showed as if under the management of skilful hands, inside the building the plants looked only indifferent. The Creepers were certainly well trimmed, and the basket plants looked well: but the former were very common, and the latter, hung in large baskets and removed a long way from the eye, looked by their very position well, whether in flower or not; and they have a good chance to do well in such a position. But the plants, which are placed to form important features to that part of the Exhibition which illustrates the customs and habits of the barbarous tribes, certainly show but very indifferent cultivation. Even the class of plants which are of easy culture in a usual way, seem not at home where they are; and it is to be hoped that this popular portion of the building will be better represented in the rural or forest scenery there attempted to be given, which, with plants from the temperate regions, ought certainly to be accomplished. A better excuse exists for Orchids, and other tropical plants, not looking well when subjected to the draughts so unavoidable in a large open building.—A GARDENER.

THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.

By P. V. M. F.

(Continued from page 11.)

SAVING AND UNITING OF BEES.—I have supposed that the cottager would take up his hives in the old way—I mean with the pit and the sulphur match. This, after all, is the quickest and least troublesome method of obtaining the riches of a hive, and it is often the most merciful way too. Moreover, the practice will be done for ages to come, whatever may be said in favour of any other mode of depriving bees. I must add, moreover, that I very much question the advantage to the bee-keeper of saving the lives of the *full-grown* bees of his plundered hives, by joining *them* to his other stocks. By all means save the *young brood* in hives plundered after the end of July; for most of these, when hatched, will survive the winter; but if it be true that bees live only six or seven months, as seems to be the case, then the *only* use which saving the hives of old bees can serve is to *assist in hatching out the young brood*. As, however, every humane mind shrinks from destroying life in any form, I proceed to give two methods of saving the lives of bees, to the first of which, in my own practice, I give the preference. These are by *driving* and *fumigating*.

Driving bees is to expel or *drive* them forcibly out of their habitation, by acting upon their fears. The operation is extremely simple when once mastered. It is best done early in the day, when most of the bees are at home, as the fuller the hive the better. Take an empty hive the same size as the full one which is to be plundered, turn the full hive bottom upwards on a stool or in a pail, and fix the empty hive firmly upon it as one would put a cover on a dish; then tap the sides of the lower or full hive with the knuckles or a couple of sticks. Do this smartly, yet not so as to shake the hives. Presently, sometimes almost immediately, a great humming noise is heard, followed by the ascent of the bees, queen and all, into the upper hive. Wait a minute or two till the bees have grown quiet again, and then lift off the uppermost hive as gently as possible. Peep under it without moving its position for fear of disturbing the bees, whom an awkward shake would cause to fall down on the ground. If you see a large mass of bees collected at the top and sides of the hive, you may be pretty sure the queen is with them. Set the hive, therefore, in the place of the old stock, and move the latter away to some shady place, taking care to leave the entrance open. The bees capable of flying which were not driven out of it will quickly leave it one by one, and join their companions in the empty hive. You must now carefully watch both hives for some time, to be sure that the queen is with the driven bees. Of this you may be certain

if you see the bees leave the old hive without returning to it, or if the driven bees are pretty quiet, and collect together in the empty hive. Sometimes, however, the bees will not ascend into the empty hive for a good many minutes, in which case there is no remedy but patience, or the brimstone pit, if they refuse to ascend at all. A bee-dress must, of course, be used in performing this operation, although it is surprising how quiet the bees generally are when under the influence of fear. The bee-dress I use is made of *green lenos*, with sleeves of chintz of the same colour. It goes loosely over the head and shoulders, and ties round the waist and at the wrists. A stout pair of long leather or woollen gloves, *fastened under the sleeves* of the bee-dress, effectually protect the hands from injury.

The simplest mode of *fumigating* bees is that given by John Keys, whose very words I shall transcribe. The *puff*, of which he speaks, is the common punk or puff-ball of the fields, which, when dry, holds fire like tinder. The mouse-skin *byssus* found in wine vaults answers just as well. "Make a *hole* in the ground," says Keys, "something less than the circumference of the hive, and eight inches deep: spread a cloth to cover the bottom and sides. In the evening take a stick seven inches long, having a slip (or *slit*) in its end to receive a piece of puff about the size of an egg; light it, stick the other end in a clod of clay, and instantly place the hive of bees over it; and they will become as easily stupified as when suffocated by brimstone. If one piece of puff is not sufficient, put in two or three upon sticks."

The bees that have been saved, by either of these processes, must be joined to one of the hives next to the place where the plundered hive stood in the summer; otherwise, the bees saved would soon perish of hunger. A good way to unite these bees to their neighbours is as follows:—At night, when the bees are quiet, take the stock to which they are to be joined, and set it gently on the ground upon a couple of sticks. In a quarter of an hour or so bring the hive with the saved bees, and dash them out of it suddenly upon the ground, just in front of the stock. They will speedily crawl up into it, especially if they are pushed gently with a feather, so as to quicken their movements in the direction of the stock. This latter must be put in its proper place before morning.

(To be continued.)

QUERIES AND ANSWERS.

CUTTING DOWN AND PRUNING THE PASSION FLOWER.

"A READER OF THE COTTAGE GARDENER wishes for further information respecting the treatment of a young Passion Flower. She adopted the plan laid down in your number for March 10th, 1857, and cut down a young plant in the following April. This has grown most vigorously in a small greenhouse, and runs all across the glass, but she is now at a loss to know how it is to be treated this year."

[The common Passion Flower ought to be cut down very close *four years running*, in April, even if it were seven years old at the time of planting it, but not quite so close in a greenhouse as when trained out of doors. The reason is, that the more it is cut down the stronger will be its growth, because ten very strong leaves will digest more food than fifty ordinary leaves, from the common way of pruning. Also, the closer it is pruned the more flowers it will give, for the same reason, and they will come a year or two sooner from close pruning. Supposing your plant to be against the front of the greenhouse, we would cut it down to one-half of the height of the front this season, and next year we would cut it just under the angle of the roof and the front. After that we would take one shoot to the right and one to the left, horizontally along the top of the front glass, and cut each of them to four feet from the last pruning, and so on till they met on the same level all round the house, supposing that to be practicable. The shoots from these horizontal arms we would train anywhere during the summer, and cut them back to two eyes every April for the next 150 years, or make a provision to that effect in the chronicles of the said greenhouse. Our own Passion Flower out of doors is the best in the country: we

have an arm right and left, six inches from the ground, and many feet long. Then an upright from between the first pair of arms, nearly six feet high, and there the whole plant is run into a second pair of arms, and the four arms are trained as horizontally as the joint of the brickwork. When we prune all the last summer shoots, in April, to one or two eyes, no one would believe the thing was a Passion Flower at all, but the next summer it blooms better than ever.]

STOPPING VINE LATERALS—STOCK FOR AZALEA SINENSIS.

"Should Vine laterals be pinched off at the first joint, or taken clear out? Will the *Azalea sinensis* thrive well on its own roots, or do you think it would succeed well if inarched on *Rhododendroides*?—J. H. H.]

[You are to stop all the laterals on your Vine just beyond the first joint, and if that joint or eye breaks into a shoot you are to stop that second "start" one joint more, and so on till your Grapes are full sized.]

The *Azalea sinensis* will thrive on its own roots, and bloom as yellow as a Buttercup. It will also "take" by grafting or inarching on any *Rhododendron*, and do tolerably well, and so it will on *Azalea Rhododendroides*, but *Azalea pontica* is the best, or one of the best, stocks for it.]

MANAGEMENT OF A GREENHOUSE VINERY.

"I have a greenhouse twenty-one feet by seventeen feet; there are seven Vines, *Black Hamburgh*, and *White Sweetwater*. The late occupier neglected the Vines, for flowers, and they are, consequently, not in good order. I had them trimmed in November, and taken out of the house; they were put in again in February. I began heating the 2nd of March, temperature 60° by day, and 50° at night. Is that the proper temperature to commence with, and when should it be increased? My object is to grow good Grapes, have a few greenhouse plants, and to preserve my plants for bedding out. Will the necessary heat for the Vines injure Geraniums, Fuchsias, Calceolarias, Petunias, and Verbenas, intended for bedding-out; if so, what would you advise me to do, having only one house, and considering the flowers as secondary to the Vines? The Vines are in a border outside the house, I have covered it over with some long dung. Would it injure the Vines to dig the border? Would it do them good to water them with guano water? If so, what strength should it be? Would three Cucumber plants be too many for a box four feet long, fifteen inches deep, and twenty-one inches broad, to grow in the greenhouse. Apologising for the number of my inquiries."—AMATEUR.

[When I was in my first place, the late Joseph Knight, Esq., of the Exotic Nursery, Chelsea, after looking round, told me "I was worse than even the nurseryman, for cramming," and he gave me the sage advice to have fewer things in one department, if I wished them all to do well. At that time, in a narrow steep-roofed house, I recollect that I had French Beans, Strawberries, and Cucumbers, fit to gather. Vines in pots, setting and in bloom; and Figs against the back wall growing away vigorously. Melons, in pots, were just showing their fruiting flowers; a few stove plants were growing nicely, and beneath the shade of the Cucumbers, that were trained on a trellis, numbers of pots were filled with cuttings intended for the flower-borders. The first things I found thoroughly out of place were the Fig plants against the back wall. Growth I could have in plenty, but the high temperature, and the shade combined, prevented me seeing anything of fruit, and as the wood could not be eaten, my employer wisely suggested that I had better pull them up. A few Vines planted in a similar position ultimately shared the same fate, for as I could spare them no roof space, I could get nothing but leaves against the back wall, though, if I had not covered the roof with vegetation, I could have the back wall well supplied with Grapes. The reason I planted the Figs was, being informed by several older gardeners, that Figs would answer very well, with a very diminished light. Since that period, I have always stated my belief, that the success of Figs, Vines, Peaches, &c., on the back wall of lean-to houses, would just be in proportion to the

open spaces left on the roof for the free transmission of light. From that period, though possessing a warm sympathy with those who try many and different things in one house, I have also advised, that where great perfection in one thing was desired, a prominence should be given to that, though other things should be somewhat injured. Thus, if flowering plants were the main object in a greenhouse vinery, the Vines must not be too thick, nor must the temperature be higher than what the plants would require. With such greenhouse treatment, I have often seen splendid show Grapes in September and October. If anything like forcing the Vine was attempted, say beginning of March, like our correspondent, or earlier, not only would greenhouse plants suffer, but bedding plants that could not be removed would be rendered weak and spindling. The matters touched upon by our correspondent, though most of them have been several times referred to, are so generally interesting at this period to many readers, that a few remarks may not be out of place.

1. *Taking Vines out of the House*.—This I look upon as mere useless work, unless where very early forcing is attempted, say, when the Vines are started in October or November. In such a case, taking the stems out induces an earlier ripening, and an earlier rest. Taking them out in November could be of no use whatever, in the case of our correspondent. After they were pruned and washed, there would be no danger of the Vines starting, unless the average night temperature was above 45°, and that would be quite high enough for greenhouse plants in fine weather, and 5° less would be high enough in severe cold weather. The taking the Vines out, therefore, was not only superfluous labour, but if the wood was not thoroughly ripened, it was also dangerous, unless the stems were protected from severe frost. I recollect once seeing a house of Vines cut down to the ground by a severe frost, even when the stems were left in the house with air, or whilst they were safe and sound in another house in exactly similar circumstances, with the exception that the ventilators were shut. Some people have told me the extreme degree of cold that Vines will endure uninjured in France, and Germany; but they do not take into consideration the drier atmosphere, and the clearer unclouded sky they enjoy there in the summer months, which give a ripeness and hardness to the wood, which Vines do not often acquire in this country. The very keeping them in houses exerts a debilitating influence, and more care, therefore, is required to keep them from extreme cold afterwards.

2. *Temperature in Forcing*.—I have no faith in what are called dashes in forcing. Their customary influence is to start some buds, which monopolise all the sap they can get hold of; and, consequently, many buds never break, or start at all. More especially are these dashes objectionable, if from not early covering the border, &c., you cannot reckon upon a corresponding action between roots and branches. It is safest when the roots are excited a little before the top. I would begin with 45° at night, especially in such weather as we had at night in the beginning of March; increasing it 5° during the day without sun heat; and 10° or more with sun heat, shutting up early, and giving plenty of syringing to the stems. Increase the temperature gradually, but never allowing it to get higher, at night, than from 50° to 60°, until all the buds are broken and lengthening freely. I never like them to be above 60° at night, until they come into bloom, and then 65° will be hot enough for all, except *Muscats*, and difficult setters, which may have a few degrees more; but I find from 60° to 65° generally sufficient for all, if they have a good rise—say, from 10° to 20° from sunshine, with but little air, and that given early, if not left on at all times. Suppose, then, that the average temperature at night, when the Vines are in bloom, is from 65° to 70°; it is good practice gradually to lower 5° at night, as soon as the fruit is set. This higher temperature, when in bloom, in unison with a fair amount of moisture in the atmosphere, not only promotes the free setting, but it lengthens the main stem of the bunch, so that after thinning, the bunch is longer, and larger than it would be likely to be, if the Vine had no more than greenhouse heat. In a greenhouse, if the plants could be removed for a short time, when the Vines were in bloom, so as to obtain this extra temperature, then the bunches would be all the better for it. The continuance of this high temperature at night afterwards is more prejudicial than otherwise; it lengthens the footstalk of the

berry, debilitates the whole system of the plant, and helps, with other evils, to produce shanking, shrivelling, rusty, and bad coloured fruit. (See a former article on the shrivelling up of Peach blossom.)

3. *Covering Vine Borders.*—Lately the whole subject was discussed, and an attempt was made to show, that the nearer the roots were to the surface the greater the need, not only of protection but of such an amount of heat thrown into the border, by covering, as would make the roots in advance of the branches, where forcing much was resorted to. This covering should remain just as long as it will tend to keep the border warmer than the sun would make it without its help, when it should be removed. Even if there is not depth enough in the covering to throw heat into the soil, yet if put on early in autumn, and cold rains and snows do not get through it, it may be perfectly successful in preventing heat, stored up in summer, escaping from the border. Those who have never tried such a border, with a thermometer, would be surprised to find how comfortable it might be kept all the winter by a thinnish covering of straw, if so put on that the wet could not get easily through it, and put on so early that the ground had not parted previously with its summer temperature.

4. *Digging Vine Borders.*—If the roots are deep, this will do no harm, if the spade does not reach them. If the roots are near the surface, and thoroughly under command, the spade would be perfect ruination. A scratch with the point of a fork, an inch or so in depth, is all such a border should get. If there are no roots within a foot or eighteen inches of the surface, a forking to that depth would do good, as letting the air in among them. In such a case, a little covering, to exclude frost, is all that you require, as you could hardly expect to throw heat downwards to such a depth by any amount of fermenting material. When well drained I have known such Vines do well, both early and late. When you wish to have roots, as well as tops, under control, I would advise one of two things with such Vines. Either remove the surface soil, so as to bring sun and roots nearer each other; or take up the roots in autumn, as soon as the fruit was cut, and place them within six or nine inches of the surface.

5. *Watering with Guano-water.*—Generally in spring the ground is rather too wet to need more watering; but if protected from autumn rains, and sheltered from wet during the winter, and it is not already extra stuffed with organic matter, few things would be more telling than a good watering with manure water, at a temperature of about 80°, after the Vines are growing. As the strength of the manure, unless the roots are very near the surface, will not reach the roots at once, two ounces of guano for three gallons of water would not be too much. If the roots are within six inches, or less, of the surface, half of that quantity of guano will be amply sufficient. The state of the border must, therefore, be your guide.

6. *Combining Vinery with Greenhouse Plants.*—If you commence to force in the beginning of March, you will be able to do little good with Pelargoniums, Calceolarias, Cinerarias, &c., after that time; the increased heat will elongate, or draw them too much, and render them liable to hosts of green fly. You may, however, have a nice show in winter of Camellias, Epacris, and such Heaths as *Hyemalis*, and *Willmoreana*, along with early Cinerarias, Chinese Primulas, and Dutch bulbs of all sorts. The flowering of these would be nearly over before the extra heat was applied, and that extra heat, and a little shade from the Vine leaves, would just be the thing for encouraging growth in the Camellias, and Epacris, after the latter were pruned; and both could be set out of doors in July and August.

7. *Vinery with Bedding Plants.*—With only one structure, the same evils will result; if you commence forcing on the 1st of March, the Verbenas, Calceolarias, Pelargoniums, &c., will be rendered so weak that they will suffer greatly when transferred to the beds. One of two courses with respect to them, I should advise. Either defer forcing for three weeks or a month, and then the Vine will be swelling naturally, and the hardier plants, such as Calceolarias and Verbenas, being taken out first, when the heat is raised above 45° at night, could be protected a little with a few branches, or a sheet of calico, or a mat at the foot of a fence, removing it in fine days; or, if you resolve to commence on the 1st of March, and still have a number of plants for your flower garden, construct something in the shape of a cold pit for yourself, into which the

Calceolarias and Verbenas might be removed first; leaving the scarlet Geraniums, &c., the longest in the house. An earth pit, say five feet wide, eighteen inches high at back, and nine inches in front, would be a very simple matter. But if turf, or slabs, could be obtained, it would be better still. If earth, or turf, a slight rail might be fastened to small posts on each side. Various modes of protection, such as straw mats, hurdles, and Russian mats may be resorted to. But I prefer the following, which I have used for some years. If the pit is about five feet, or nearly so in width, strong unbleached calico, to reach across from side to side, may be procured for about fivepence or sixpence per yard run. On each side of that calico, and about three feet apart, I have a tape loop to go over a nail fixed in the rail on each side of the pit. For every eight or ten yards in length, I have two poles, say seven feet in length, and to these the two ends of the calico are securely fixed; leaving about a foot of the poles at each end unoccupied by the calico. The calico is rolled on one pole. The other pole is fixed across one end of the pit. Walking onwards, with one end of the other pole resting on the rail at the back, and that turning round as well as the end of the pole in your hand, you leave the calico behind you. Then strain it tight, and fasten this pole as well as the one at the other end. Go along and place the calico loops on each side over the rails, and you have a roof, that will let in a great deal of light, and send off heavy rains. To prevent bagging in the middle, place such sticks as would do for Hollyhocks, or Dahlias, across the pit from side to side, before you use the calico, and that will keep it straight. I generally plant out under such protection, and raise the plants in May for the places in which they are to bloom. If that planting is done early, as in the beginning of March, more covering in the shape of mats, or straw, will be required in very severe weather. After the end of March, it is seldom that more will be required than the calico. What I like the calico for, is the great saving of labour it secures. Provided the plants are well watered at the roots when turned out, and dry soil to prevent the cooling effects of evaporation put on the surface, I have seldom needed to give either water or to remove the calico for two or three weeks. Enough of light is admitted to cause the plant to grow freely; enough of air gets through to prevent them from being drawn, and they are alike secured from a burning sun, and a parching, drying-up east wind. When you wish to water, or give a full exposure in a mild, dull day, so as thoroughly to harden off, you can unloop and roll the calico up, quicker than I can write a couple of lines. The same calico, if taken care of, will last many years. Where the most is to be made of a greenhouse vinery, as respects Grapes and bedding plants, I know of no such suitable, economical adjuncts as such turf pits, supplied with such a calico covering; a large flower garden may thus be supplied with bedding plants from but a small greenhouse vinery.

8. *Cucumbers in a Vinery.*—Wherever there is an open space, and the leaves can be placed at a foot or fifteen inches from the glass, these will answer well; but they should not be introduced until the average night temperature ranges from 60° to 65°. For very long kinds, the temperature should be from 65° to 70°. The varieties *Kenyon* and *Sion House* will do admirably at an average of from 60° to 65° at night, with a rise of from 10° to 15° in a sunny day. In such a sized box, as that described, I would prefer two to three plants. But, supposing I wished to get what early fruit I could from a plant, without caring much what became of it afterwards, I would, by cross boards, divide such a box into three divisions; place the strongest plant in the centre, take some fruit from it, then pull it out, reserve the soil and the dividing boards, and fill up with fresh soil, which would encourage the two side plants; and if these were afterwards surface dressed and well watered with manure water, it is no paradox to say that, other circumstances being suitable, the Cucumbers from such a box would soon weigh down the earth in which the plants are grown.—R. FISH.]

HEATING OF GREENHOUSES.

“Being about erecting two houses for greenhouse plants, I should like to know the most economical way of heating them. They are simply for Geraniums, and similar plants,

in one house; and New Holland plants in the other, or, probably, the latter may be Heaths. And, as much heat is not required for either of these purposes, I am unwilling to go to the expense of hot-water works, which I find, with all its presumed advantage, is a costly affair. I have a sort of a plan in my mind's eye, which I thought of trying; but I should rather like to hear the opinion of those having had more experience in such matters. However, I have determined not to have hot water, and being disposed to try flues, I should like a few hints on the best way of managing them. A thick flue is a slow way of communicating heat to a house. I, therefore, thought of having a few feet of brick flue next the fire-place, say twelve or fifteen feet; afterwards, I thought of trying some description of earthenware, or cement piping, of about twelve inches diameter inside. This being only about one inch, or one inch and a half thick, would certainly transmit heat through faster than a brick flue, which, when built in the ordinary way, is nearly four inches thick; for most flues are plastered inside and out, and the brick-on-edge will, altogether, absorb a larger amount of heat than can well be afforded. The only evil to be apprehended on the pipe flue, is the danger of its cracking with the fire; and, of course, it cannot retain the heat so long as a stouter substance. But the purpose it will be wanted for, is simply to maintain a temperature of 40°, or so, and not to sustain a high forcing heat; and, in mild winters, it will not be much wanted; that I think a good, useful flue may be formed by introducing a little brickwork, and covering at certain places along its course, and let the remainder be cement-jointed pipes, with a good entrance of brickwork near the fire. But I shall be glad to have the opinion of those who may have tried the above, or other modes of heating; at the same time, I should not like to engage in anything expensive.

"The cheap and efficacious heating of garden structures is a subject that has not, of late, been much attended to, for, with the exception of heating some hot-water apparatus with gas, there has been nothing new before the world for some years. The Polmaise system may be regarded all but extinct, and the other modes of heating churches and public buildings, by currents of hot air, seem not applicable to my purpose. An Arnott's stove is a homely contrivance sometimes adopted, but I do not like that; in fact, I should like to see fire-heat applied in a way that makes the most use of the warmth applied. And I cannot but think if fire-heat was economically disposed of, it ought to increase the temperature of a given volume of atmospheric air, as much as the same amount of fire applied to the best-arranged hot-water apparatus. The improvements that have, of late, taken place in the latter mode of heating, has given it a decided advantage over the common brick flue; but if the latter was improved, or altered, so as to waste none of its heat, it ought to do as much work as the hot-water contrivance, so much insisted on by all who are regardless of expense."—X. X.

[There is a fund of sound common sense in the remarks on heating made by your correspondent "X. X." It appears, on the face of it, that he is as able to give advice as to ask it. There seems to be a little prejudice lurking in his mind, as to the expense of a hot-water apparatus. When several small houses can be heated by a 50s. or 60s. boiler, and if pipes can be got for about 1s. per foot, the expense is not so very enormous, and considerable saving would be effected in furnace attendance, if one fire would answer instead of several. Economising the heat could also be secured, by taking a flue from the furnace into the department requiring most heat. For all large establishments, then, or where a number of houses are to be heated, I have no hope that "if the flue was improved and altered, so as to lose none of its heat, it ought to do as much work as the hot-water contrivance, so much vaunted," as suggested by "X. X." An examination of Mr. Weeks's Nursery would at once dispel this idea. In this neighbourhood, Mr. Ormson has placed one of his large boilers, so that a number of houses may be heated from one furnace, chiefly on the saving of fuel and attendance principle. For all rather small detached houses, and where a great heat is not required, I perfectly agree with your correspondent, that a modification of the flue is the simplest, best, and most economical. The less work required from a hot-water apparatus, the greater in proportion will be the amount of heat lost, by its going up the chimney, however carefully

you use the damper; unless, indeed, you also use a flue for a certain distance.

In previous volumes, rather full information is afforded on this subject. Mr. Caie, now of Inverary Castle, and formerly of Bedford Lodge, now Argyle Lodge, Kensington, used common earthenware pipe, jointed with lime plaster, for many years, in places where he wanted no more heat than just to keep the plants safe. Mr. Keane, our worthy coadjutor, has also had considerable experience with them. I also mentioned, how a large house at Hitchen Nursery was heated by them. They have since been removed, chiefly for two reasons, that they were liable to accidents, and Vines being planted, they would not yield the requisite amount of heat, without being liable to crack; a contingency that would not be likely to happen, where a milder heat was required. About the time these matters were noticed, I was written to privately by a gentleman, whose address has completely escaped my memory, but if he sees this, perhaps he will be good enough to notice it. He wished to use, for heating some detached houses, some strong hard-glazed pipes, about a foot in diameter, such as are used for sewage, &c. I advised him to sink the furnace sufficiently, so as to have the bars of the grate from eighteen to twenty-four inches below the bottom of his flue, to carry a common brick flue from four to six feet from the furnace, and there commence with the pipes, and instead of elbow joints, to form a small open brick pier at the corners, and also at every fifteen or twenty feet in length, so as to receive the ends of the pipes, and be covered neatly with a tile to fit. By raising these tiles, the pipe flue could be swept in a few minutes, without disturbing the pipes, or their joints; these joints being partly formed with cement, and partly with well-wrought lime plaster, and, as I expected, the latter answered rather the better. I was informed afterwards, that nothing could suit the purpose better, and that from sinking the furnace well the draught was so strong, that when examined, after considerable use, there was scarcely a vestige of soot in the pipes.

Where the floor of such greenhouses is paved with bricks, or paving tiles, nothing can be more suitable than the plan adopted by Mr. Snow, in several lean-to houses, in which he keeps a great portion of his pot plants. This mode has also been described. A flue about five inches wide, and six inches deep, is placed low enough to receive a thin tile over it, such as is used for roofing, and then the brick of the flooring, so that you see nothing of any heating apparatus whatever; and from my own observation, and Mr. Snow's testimony, nothing can answer better. I have a small lean-to house, about ten feet wide, ten feet high at back, and six feet high at front, four of that being glass. The floor is paved with nine-inch square tiles. A flue four inches wide, and six inches deep, inside measure, enters at one end, and returns again. I thought of using only one brick-on-edge for the flue, but, having plenty of bricks, I used two bricks on bed. If smoky coals were used, perhaps nine inches deep would be better, but, as I use chiefly cinders, and the draught is good, you can hardly see any soot at the end of the winter. Three lines of bricks form the go and return flue. The bottom and top near the furnace are formed of soft thin tiles. Farther off, pieces of refuse house slate were used. The bricks were laid in mortar, but no plastering whatever used inside. A layer of mortar is placed over the thin tile or slate covering, and on that two tiles cover the two flues, on a level with the rest of the floor.

As heat ascends in a few minutes after a brisk little fire is lighted, the tile covering gets hot, and no house can be easier managed, only the damper must be used, to prevent too much draught. As combining efficiency, security, neatness, and economy, I know no better plan for small greenhouses, if the ground enclosed is floored. I have always been afraid to state how few coals and cinders kept this house comfortable during the winter. About 40° is the average night temperature. In very severe nights, I have preferred 35°, to extra heating the tiles. In continuous frosty weather, the fire must just be kept burning slowly, and more regularly. In a sudden frost, a very small time gives heat enough to counteract it. Those who have not tried it, could hardly credit the rapidity with which the heated air passes along these narrow flues.

The description given of flues, plastered inside and out, is just the way in which they used to be built, but few, I pre-

sume, are so built now. It was deemed essential in forcing-houses, to prevent bursting, and the escape of smoke and gas. The plastering inside in old flues often caused explosions, from pieces falling down, and stopping the draught. I have thus had a house of Cucumbers and Beans destroyed in a few minutes. I would, in every case, dispense entirely with inside plastering. For forcing, I would be inclined to dispense with plastering inside and outside, but I would form the sides with bricks on bed, and use the very best sand and lime, and soak the best bricks properly before using them. Two bricks on bed, for each side, and covered with a twelve-inch tile, with thin tiles or slates below to cross the joint, would be ample for a small greenhouse. I mean going round the front and ends, without returning. In such a case, the heat would come chiefly from the top. Two bricks-on-edge would require a slight plastering on the outside, or a repeated thick brushing of new lime and sand and water. Deep flues for heating I consider about as profitable as deep tanks for hot water. Of course, the more smoky the coals used, the more room must be given; but in my small four-inch wide flues, I have never had any inconvenience.

I hope these remarks will somewhat assist your correspondent, and that others will contribute their share to meet the case. For very large houses, or for an assemblage of houses near each other, the heating all from one boiler, with another boiler to fall back on, in case of accident, will be, in every sense, the best. For small detached cool greenhouses, some adaptation of the heating by flue will be the simplest and most economical.—R. FISHER.]

PROPAGATING AZALEAS.

"I have some young Azaleas which are sending up shoots from the bottom of their stems, and I should like to take them as cuttings, but do not know how to treat them."—J. P.

[If your Azaleas are of the Chinese kind, young shoots from the bottom, or from the sides, or top, will strike very freely. Let the cuttings be from one inch to three inches in length, but two inches is the best size for them, and if you could slip them out of their sockets, as it were, they would be like heeled cuttings, and do best that way. But, recollect, the whole cutting must be the growth of the same season. One half peat and one half sand is the compost to root Azalea cuttings in, with a layer of clean sand on the top; and a bellglass over them, in a Cucumber bed, would soon root them.]

Be not deceived in your cuttings, however; most of the bought pot Azaleas are grafted plants, the stocks being made of cuttings of the coarsest sorts, and as many cuttings as could be got with heels, were sure to be first made, because they give less trouble. It is one of the properties of plants from pulled cuttings, that they throw up shoots from the bottom, therefore, the shoots from the bottom of your Azaleas may be from the stock, and not worth the trouble of striking. But every healthy Azalea will furnish cuttings about this time, from among the flowering shoots, so that there is no need to hazard the chance of stock cuttings. It will not hurt a plant in the smallest degree, to take one or two young shoots for cuttings from the tops of the main branches, when they are about two inches long.]

POTTING OFF VERBENA CUTTINGS—SOWING IN SLIGHT HOTBED.

"I have a good many cuttings of Verbenas, which I have kept in the pots in which they were first struck, through the winter. Shall I pot them off now? I have kept them in a window, having no greenhouse; they are thick in the pots. I have struck a few in a garden saucer, under a common finger glass, in my sitting-room, as recommended by Mr. Kidd in your paper, and they seem rooting nicely.

"I wish to sow seeds in a slight heat now, and also strike cuttings, but have only a heap of leaves which have been laid up some time, but will not get hot. Will they be better than sowing the seeds in pots in the window, and putting a square of glass on the top?"—GRACE ANSON.

[We thoroughly congratulate you on your success. Such

information as yours is very cheering. If you can command room, pot off your Verbenas in small pots separately. If scarce of room, give a little more pot room, by placing your pot of struck cuttings into a larger pot, and do not divide until you plant out. Could you concoct any sort of earth pit, as mentioned the other week? The plants would be better planted out, three or four inches apart, into light fibry soil, with a little leaf mould in it, and be covered with calico, with an extra protection in a cold night. After the first week in April they would do better than in the windows.

Before adopting any of these plans, take off the tops of them, and strike them as you have begun doing, on Mr. Kidd's plan, but recollect if you strike in saucers in sand and water *only*, you must remove them, and pot them in very sandy soil, kept moist, as soon as they are rooted, or you may be disappointed afterwards. If you struck them in a pot, well drained, filled up rather better than half full with sandy soil, and covered with a square of glass, such plants might remain in the pots, if you liked, until planting-out time, or be turned out under the calico covering. There is nothing new in striking cuttings in the saucer in sand and water. The adaptation of the principle to striking cuttings in windows, as propounded by our old friend, Mr. Kidd, is decidedly new; at least, we never heard of the plan being recommended for window gardeners before; therefore, for them it has all the merits of a discovery, and, as Mr. Beaton shows, for the younger branches of the household, it is a grand thing to be able to examine all about the rooting process, and yet not hurt the cuttings, by pulling them out and placing them in. So far as our experience goes, after success will greatly depend on getting them out of the pure sand as soon as well struck. As the weather gets warmer, and if your leaves are neither too wet nor too dry, they will be sure to heat, and would form a fine bed for your seeds, could you put a glass frame over the bed, and, perhaps, a covering of coal ashes over the leaves, in which to plunge your pots. Failing these accessories, and also protection for your frame in cold weather, we would decidedly recommend you to sow the seeds in pots in the window, and cover with a square of glass. Cuttings will do, as you have already proved. A few of the tender seeds might be kept on a tray by themselves, and be moved to the neighbourhood of the chimney at night. You have already done so well, that we feel confident of your success, and shall be glad to hear of your progress. You will perceive, that could you move your old-established plants under other protection, you would have the windows for seeds and cuttings.]

ORANGE TREES SHEDDING THEIR LEAVES.

"My Orange trees are planted out in the conservatory. They were planted there last autumn twelve months. And last spring the leaves turned yellow, and fell off, and they are falling off this spring. They begun to turn at the tip of the leaf. They are pushing up young shoots and leaves; but the old leaves are all falling off, and the trees begin to look quite naked. Some of the Camellias are becoming so too. They were all planted at the same time, and in yellow loam, peat, and leaf soil. The conservatory is 120 feet long, by 23 feet wide, and the end of it looks to the sea. Where it is built, used to be a dock where the salt water ran through. This was filled up with rubbish at the bottom, and a two-foot wall at the end, to keep the water back. I have a large eistern in the front, that catches the rain water, and a forcing pump inside to water with. The eistern was cemented at the sides and bottom, so as to keep the salt water out. Now, the south winds blow right on the flower garden, from the sea, and into the conservatory when it is open. Do you think it is the sea air that injures the Orange trees? They are large, being nine feet high, and six or seven feet through. They came from France the summer before last. Some of the Camellias are nearly as high."—A CONSTANT READER, Branksea Island.

[We can hardly make out some words of this communication, but from the description of the site of the large conservatory being, what was once an old dock, at Branksea Island, and the fact, that the south winds from the sea blow right upon the conservatory, we have little doubt that the scorched-up appearance of the old leaves, and also of

Camellias, at this season, is owing chiefly to the position of the conservatory. We do not think there can be much the matter with the roots, as the soil is suitable enough, and we suppose there was a good depth of rubbish put into the old dock, before the soil was placed in for the conservatory. It would have been advisable, that before the compost was placed on the rammed rubbish, a thick layer of concrete, or even of cement, had been placed all under the site of the conservatory. We have had several proofs that when once salt, to a good extent, has got a lodging in the soil, it will, by degrees, work itself upwards, and perform very destructive freaks. Some years ago, in order to drive off everything in the shape of worms and slugs from an earth pit, to be used for propagating purposes in autumn, we gave the whole a good watering with salt water; and after standing for a fortnight, the bottom was covered with four inches of coal ashes, and on these boxes of cuttings were set and covered with glazed lights. In a week, the cuttings appeared as if they had been fired; and on trying some of the browned leaves, we felt that they were slightly impregnated with saline matter. A neighbouring standing place or earth pit, treated exactly alike, with the exception of the salt watering, showed no such symptoms.

The free breaking of nice green healthy leaves, however, leads us to suppose, that the sea spray dashed in by the wind, when the conservatory is open, is the principal cause of the misfortune. The chief remedies to be applied would be having the openings for air on the side farthest from the sea, and these openings protected on the outside with fine wire-gauze blinds, or plates of zinc, perforated with small holes, through which the water will not seek to enter, provided it can get the chance of trickling down outside. The best plan of all, perhaps, would be to throw up a bank between the conservatory and the sea, and plant it thickly with Sycamore, and the Evergreen Oak (*Quercus Ilex*).

A secondary cause will proceed from the water used, if the fresh-water tank is supplied from the roof of the conservatory, as from the sea spray lashing against the glass the water will be impregnated with salt, and by application at the roots, and especially by syringing over head, be very likely to promote the appearance spoken of. The remedy here would be to use no such water, especially after winds from the south.

In a former volume will be found a notice how well the rarer and newer, as well as the commoner Rhododendrons flourish, at Dysart House, close to the Frith of Forth; but the force of the sea breeze, and its salt spray, are kept off by banks and plantations.

Let it also be kept in mind, that though an evergreen, it is quite natural for the Orange and Camellia to lose a number of their older leaves every spring and summer. We should be more confirmed in the above views, did we know, that the strongest winds from the south generally happened shortly before the leaves were affected.]

TO CORRESPONDENTS.

BEES (*Spes meliora*).—Find some one who will sell you a swarm, and by the end of this month let the vendor have the hive you wish to use, ready to put the first swarm into. When lived, tie it up in a cloth, and take it home. The directions to "simple folk" will be of service to you.

ROSES (*E. M.*).—What we said will suit your locality. Obtain the Roses in pots, and then you may plant them out when convenient.

EARLY SYDENHAM POTATO.—*J. Vaux* will be obliged by Mr. Bennett stating where these can be obtained.

AZALEA AND CINERARIAS (*A. J. A. Z.*).—The Azalea blooms were too much injured for us to recognize it. The colour of Cineraria, No. 2, is a very rich earmine. Both are good flowers, but not better than many like them in form and colours.

PEAR FOR SOUTH WALL—ESPALIERS—LATE IXIAS (*An Amateur*).—Without knowing what part of the country, or kingdom, the wall is in, it would be worse than useless to recommend what kind of Pear to grow against it. All we can say is, that the *Jargonelle* Pear will ripen against a wall two hundred miles north of Edinburgh, by the mail route. It will also do against a wall in Cornwall; but some of the best Pears would be spoiled by the heat of a south wall on our southern shores, and in some parts of Ireland; but would not ripen without a south wall in the far north. A wall nine feet high, and three yards long, will hardly be room enough for one Pear tree, but plant the Pear in the centre of the space, and grow something else on each side of it for a few years. But the "something else" depends on what part of the world you are in. When the summer growth of espalier Pear trees is too much, or too strong, or too confused, it must be cut in at the time, but the cutting in is worse than useless. We cannot subdue a vigorous growth by

cutting it off, at any season of the year. The roots must first be subdued, and then the young summer shoots may be pinched, or stopped, when they are a few inches long; on no account are Pear shoots, the "foreright shoots," allowed to grow to full length. There are no Ixias so late as to save their foliage from spring frost. All Ixias begin to grow in October, and never cease growing till the middle of May with us, out of doors; and when the frost "takes" any Ixias, none of them can escape. But the idea is good; we ought, and might have spring Ixias, like the natal breed of *Gladiolus*.

A BUNDLE OF QUERIES (*G. A.*).—*Prunus sinensis albo-pleno* not forcing.—The reason why this did not succeed equally well with the *Deutzia*, is probably owing to one of two causes, either the flower-buds were not equally matured in the autumn, or the plant will not be made to gallop into flower so easily as the *Deutzia*. A few plants may stand such treatment, a great many will not. The rapid increase of temperature will either dry up the flower-buds, or cause them to drop before they open. We have known would-be clever gardeners shut up a Peach house and commence at once with 60° to 70° of temperature, and then wonder that the buds tumbled off. In such comparatively hardy plants as the *Prunus*, 50° would have been quite high enough to begin with, increasing the temperature by degrees. You have succeeded with the *Deutzia*, because it is so very accommodating, but a vast number of plants will stand no such sudden changes. The great secret of all forcing is to excite vegetation gradually. The next, so far as pot plants are concerned, is to get the roots, if possible, in advance of the branches.

***Tropaeolum Caroline Schmidt*.**—We presume this is something in the way of the *Lobbeum* varieties. If so, sow or strike cuttings in spring, pot off in rather poor soil, and keep growing all the summer, getting the plants into an eight or twelve-inch pot by August, or September, and into stiffish loam and housing it by the end of that month. It will not bloom freely in winter at a lower average temperature than 45°. We had this name sent with a *Tropaeolum*, but it was nothing but a fine large variety of *Lobbeum*, such as *Triomphe de Gand*. If this *Schmidt* is not of that kind, some kind friend will be sure to correct us. In training, it is best to have one strong shoot instead of several, taking it round a barrel trellis. Side-shoots will be thrown out plentifully from the main shoot, and these secondary ones will be studded with bloom in winter and spring.

***Wistaria consequaria* not growing.**—We have known many instances of small plants turned out in a border, do just as yours have done. In all cases where the position in which the plant is turned out is at all shady, it is best to have the plant a yard or two in length, before turning it out. In your case, provided the roots have run at all in good mellow soil, we should be inclined to let it alone for another year; and as soon as the buds swelled, which they will be doing now, to pick out all the buds but one, and that, until it was growing away freely, might be protected with a bellglass, handlight, or even a temporary little glass house, made by placing squares of glass round it and over it. For want of some such precaution, we have known instances of such young plants irremediably injured by insects, slugs, and soakings from the waterings of the plants in the vicinity. If such modes do not secure success, you may then take the plant up; but, in all cases before this plant secures strength for itself, it is advisable to cut it well back every year before allowing it to bloom.

GREEN FLY ON FERNS IN A WARDIAN CASE (*M. H. B.*).—We really hardly know how to advise you for the best, as Ferns do not stand smoke from tobacco if at all hot; one of Epps' Fumigators would do, because the smoke would be cool, and a whiff or two would be sufficient. If you smoke yourself, you might just edge up the glass a little, and send a dozen of good whiffs into it. We knew a clergyman's factotum, that used to smoke his Cucumber boxes by this mode. Just imagine a poor fellow filling a three-light box from such a natural bellows, and what a dose of the weed he must have had! Smoke from good tobacco so applied, and in a moderate quantity, will not injure the Ferns, but we should fear to burn the smallest quantity inside. If you use a fumigating bellows, two or three draws will be sufficient, and the smoke must be cool. If you cannot secure these conditions, you had better remove the cover; turn your stand a little on the side, brush off the insects on cloth, and then syringe well with clean water, at about 100° of temperature. If you resort to tobacco, use the best shag, not paper, &c.

VARIOUS (*A Subscriber*).—The *Rhododendron ponticum* and hardy Azaleas will grow most luxuriantly on an east aspect, or a north-east, or due north aspect, in every garden between Uxbridge and the Pentlant Firth, on the north of Scotland, providing the kind of peat and the under soil is favourable to them. Ponticums will grow on many soils, as well as in peat, but there is no way to know the soil for them, and other Rhododendrons, except by trying it.—The best stone for a rockery, near a house, is the very cheapest stone the householder himself can procure; but where he can get it is another question, and we know where he could get the finest stones in the world for rockwork, at three farthings the ton weight, but they are far distant.—Peaches and Nectarines will not do long on a wall under six feet high.—*Magnolia grandiflora* and *Wistaria* will do on the east wall of a house, at Uxbridge, very well indeed, if it is sufficiently high to allow them a free use of their limbs.

DISTINCTION BETWEEN RHODODENDRONS HIRSUTUM AND FERRUGINEUM (*An Old Subscriber*).—*Rhododendron hirsutum* has the leaves hairy beneath, with a fringe of rusty hairs round the edges; *ferrugineum* has no hairs, but is rusty beneath, and shining above, and in the form of a Box leaf; *hirsutum*, as it gets old, grows taller than *ferrugineum*, but they are only two forms of the same kind, practically speaking. You will find a drawing of *R. hirsutum* in the *Botanical Magazine*, t. 1853, and of *R. ferrugineum*, in the *Botanical Cabinet*, t. 63.

ERROR.—At page 5, column 2, lines 15 and 16, for *Rondeletia*, read *Rondeleia*.

LISTS OF PLANTS (*A Reader*).—You are too late now for such information; every plant that will take a prize next July, except, perhaps, the Verbena, is three-parts grown already; therefore, the three best Fuchsias, and the three best fancy Geraniums, to take a prize next

July, are the three best plants of any variety which you can pick up, or get through an advertisement. But, surely, you would think it no honour to get a prize for plants you did not grow yourself. You will have seen a reference to the best Verbenas of this season; the names of the best white and red Fuchsias, and the best fancy and common Pelargoniums, for your work, in a very recent number; and we give another list of Fuchsias to-day.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. *Sec.*, Mr. John Kingsbury, Hammet Street, Taunton.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. *Sec.*, Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. *Sec.*, Mr. James Beesley.

AUGUST 30th and 31st, and SEPTEMBER 1st. NORTH HANTS. *Sec.*, Mr. T. Moore, Fareham, Hants.

DEC. 17th and 18th.—HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, Woolshops, Halifax.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

DEVIZES CHICKEN SHOW.

WE hail with pleasure the Schedule of Prizes to be awarded at this first Exhibition of Poultry ever held at Devizes. The prizes are liberal, three in each class, and varying from £2 to 10s. There is also a £1 prize for the best cock in the Dorking, Cochins, Spanish, and Hamburgh classes; and a Sweepstakes for Game cocks, to be divided into six prizes if over thirty entries, at one guinea each. Mr. G. S. Sainsbury is the Secretary, and the day of exhibition (some Thursday in August) will be fixed as soon as the Crystal Palace Exhibition day of similar character has been announced. We hope all poultry exhibitors will sustain this *début* of the Devizes.

GOLDEN MOONIES.

HAVING seen it stated in your columns, by Mr. Worrall, that he has a Golden Mooney cock that he will show against any bird in England, I wish to ask if this bird is really a thorough-bred Mooney? I have seen a great many prize cocks shown with Mooney hens, but have never yet seen one that was a true Mooney; all the Mooney cocks that I have seen (and I have been amongst most of the breeders in Lancashire) are much smaller than those exhibited, and they are wanting in that most desirable appendage to a Hamburgh fowl—the ear-lobe. The birds that are exhibited seem to be a cross between a Mooney and the Yorkshire Pheasant fowl; in fact, it is almost difficult to decide how they have been bred, but any breeder of this sort knows well enough that they are not Moonies. I have heard it stated, that in Lancashire they have crossed them with Spanish, to obtain good cocks; this, of course, would take a few crosses to do, I should imagine. At all events, it is a fact worthy of notice, that if you have first-class prize birds you cannot breed such chickens as they can produce in Lancashire, which strengthens me in my supposition about the cross of the cocks. The same remarks apply to the Pencilled cocks, most of the prize birds being bred from nearly White hens, which breed cocks clear from all mark on the wing, those that show the faint bar being passed over as not up to the mark; whilst, in fact, they are the proofs of the genuine breed. Let anyone attempt to breed from such a White bird, and they will be wofully disappointed in the appearance of their pullets. Of course, the sole fault lies in the Judges giving the preference to the birds I have named, and not understanding the true characteristics of a Hamburgh fowl.—HAMBURGH.

PACKING EGGS FOR TRAVELLING.

IN an article published in THE COTTAGE GARDENER, of March 9th, one of your correspondents disapproves of the practice of buying and selling eggs from prize fowls. I have for the last two years frequently bought eggs, and though from some of the sittings I have failed to hatch even one chicken, I could always trace the failure to the eggs having been badly packed.

As an experiment to prove whether my mode of packing eggs was the best, I sent last year five eggs more than 170 miles by railway; they were absent three days, and twice travelled through London in the railway van. On their return they were placed with some other eggs under a hen, and four out of the five eggs were duly hatched. These eggs were carefully packed, and the lid of the box *screwed* down. The only objection to oats, as a packing material, is, that sometimes, but very rarely, an egg may be pierced with the sharp end of an oat; I have only known, however, one or two instances of such an accident. The plan I now adopt in packing eggs is to wrap each egg in several folds of newspaper, and then place a thick layer of cotton-wool and straw cut to the length of the box, both under and over the eggs, filling up every interstice with pledgets of cotton-wool. This plan prevents any chance of the eggs being broken, and preserves their vitality as well as is done by the oats. There is one thing I invariably do, and I think ought to be done by every one who sells eggs for sittings, and that is to write on each egg, legibly with a pencil, the date on which it was laid. Egg boxes should invariably have their lids *screwed* down. I have constantly received boxes of valuable eggs, of which not one has hatched, and, I believe, solely in consequence of the lids being nailed down, the jar of the hammer destroying the vitality of the egg.

No eggs should be packed in sawdust, nor should eggs more than ten days old be sent to any distance.

If sellers of eggs would adopt the precautions I have mentioned, I think little complaint would ever be made about purchased eggs not hatching.—A SUBSCRIBER.

SHEFFIELD PRIZE LIST.

IN answer to "J. D.'s" letter of March 23rd, respecting the Sheffield Poultry Show, I beg to state that, if prize-lists were made to please everybody, they would suit nobody. White Bantams being among the fewest entries, and not so much esteemed as the other varieties, are therefore classed with the "any other varieties;" although now that Game Bantams have a separate class, Whites are almost the only other variety. I presume "J. D." does not keep Game Bantams, or he would not complain at the any variety class being taken for them. I have some Duckwing Game Bantams, which I consider, and have been considered by many first-rate judges, as some of the best in England. In my estimation, Game Bantams are more handsome than Gold, Black, Silver, and (last of all) White.—H. D. SIMMONS.

NEWCASTLE POULTRY SHOW.

THIS Show was held on the 7th and 8th inst. The following prizes were awarded:—

GAME.—First, H. Adams, Beverley, Yorkshire. Second, A. Sutherland, Burnley, Lancashire. Highly Commended, H. Adams, Beverley, Yorkshire (two pens); G. Best, Barnes, near Sunderland. Commended, J. Charlton, Simpson Street, Newcastle. *Chickens*.—First, A. Sutherland, Burnley, Lancashire. Second, J. H. Smith, Skelton Grange, near York. Highly Commended, J. Dixon, Bradford; J. Carriek, Brampton, Carlisle. Commended, A. Pease, Southend, Darlington.

For the best pen in Class 1 or 2, a Gun, by Mr. W. R. Pape, gun-maker, Collingwood Street, value £12, was awarded to Mr. Adams, Beverley.

DORKINGS (Coloured).—First, Rev. G. Hustler, Appleton, Tadeaster. Second, G. Baillie, jun., Mellerstain, Kelso, N.B. Highly Commended, C. H. Wakefield, Malvern Wells, Worcestershire. Commended, J. Robinson, Vale House, Garstang; H. W. B. Berwick, Hehnsley, Yorkshire.

DORKINGS (White).—First, J. Robinson, Vale House, Garstang. Second, A. Pease, Southend, Darlington. Commended, S. Burn, 1, East Terrace, Whitby. *Chickens* (any colour).—First, G. Baillie, jun., Mellerstain, Kelso. Second, Rev. G. Hustler, Appleton, Tadeaster. Highly Commended, J. Robinson, Vale House, Garstang (White).

For the best pen in Class 3, 4, or 5, a Papier Mache Inkstand, by Mr. Robert Fisher, book-eller, St. Nicholas' Square, value £4, was awarded to the Rev. George Hustler, Appleton, Tadeaster.

SPANISH.—First, Mrs. J. C. Hall, Surrey House, Sheffield. Second, W. Lightfoot, Newcastle. Highly Commended, Mrs. S. H. Hyde, Moss Cottage, Ashton-under-Lyne. Commended, J. Dixon, Bradford. *Chickens*.—First, J. Shorthose, Newcastle. Second, J. Dixon, Bradford. Highly Commended, W. Silvester, 16, New Market, Sheffield; W. Dawson, Hopton, Mirfield, Yorkshire; J. Rodbard, Aldwick Court, Langford, Bristol. Commended, W. Lightfoot, Newcastle.

For the best pen in Class 6 or 7, a Dressing Case, by Messrs. J. and

H. Harrison, Dean Street, value £4, was awarded to Mrs. Hall, Surrey House, Sheffield.

COCHIN-CHINA (Cinnamon and Buff).—First, T. H. Barker, Hovingham, Yorkshire. Second, R. Hustler, Acklam Hall, Stockton-on-Tees. Highly Commended, J. T. Sigston, Welburn, Castle Howard.

COCHIN-CHINA (Partridge or Brown).—First, R. Benson, Darlington. Second, J. Bell, Thirsk.

COCHIN-CHINA (White).—First, J. Rodbard, Aldwick Court, Langford, Bristol. Second, W. Dawson, Hopton, Mirfield, Yorkshire. Commended, H. Bolekow, Marton Hall, Middlesbro'. *Chickens* (any colour). First, J. T. Sigston, Welburn, Castle Howard. Second, J. Shorthose, Shieldfield Green, Newcastle.

For the best pen in Class 8, 9, 10, or 11, a Set of Plated Castors, by Messrs. Jameson and Co., Hardwaremen, Dean Street, value £5, was awarded to Mr. Barker, Hovingham, Yorkshire.

MALAYS.—First, S. Saunders, 12, Portman Terrace, Globe Road, Mile End, London. Second, C. Ballance, Mount Terrace, Taunton, Somerset.

HAMBURGH (Golden-pencilled).—First, T. Robinson, Skipton-in-Craven, Yorkshire. Second, A. G. Waithman, Halifax.

HAMBURGH (Silver-pencilled).—First, H. Surtees (cottager), Lodge, near Riding Mill. Second, Messrs. Bird and Beldon, West Parade, Bradford.

HAMBURGH (Golden-spangled).—H. Adams, Beverley, Yorkshire. Second, Rev. J. C. Raw, Ainderby Vicarage, Northallerton. Highly Commended, M. Cooper (cottager), Helmsley, Yorkshire. Commended, H. Bolekow, Marton Hall, Middlesbro'; A. G. Waithman, Halifax.

HAMBURGH (Silver-spangled).—First, Messrs. Bird and Beldon, West Parade, Bradford. Second, J. Robinson, Vale House, Garstang.

For the best pen in Class 13, 14, 15, or 16, a Piece of Plate, by Messrs. Lister and Sons, Jewellers to the Queen, Mosley Street, value £4, was awarded to Mr. H. Adams, Beverley.

POLISH (Black, with White Crest).—First, J. Dixon, Bradford. Second, T. Leonard (cottager), Fulwell Cottage. Commended, T. Leonard (cottager), Fulwell Cottage; T. Brown, (cottager), Blue Bell, Fulwell.

POLISH (Golden).—First, J. Dixon, Bradford. Second, D. Wilson, Sutton Field, Cross Hills, Yorkshire. Highly Commended, W. Silvester, 16, New Market, Sheffield.

POLISH (Silver).—First, J. Dixon, Bradford. Second, W. Dawson, Selly Oak, Birmingham. Commended, J. Robinson, Vale House, Garstang; Messrs. Bird and Beldon, West Parade.

For the best pen in Class 17, 18, or 19, a Timepiece, by Messrs. Reid and Sons, Jewellers, Grey Street, was awarded to Mr. James Dixon, Bradford.

BANTAMS (Gold-laced).—First, G. Baillie, jun., Mellerstain, Kelso. Second, J. R. Blackburn, Edward Street Mill, Preston. Commended, G. B. Forster, Cramlington.

BANTAMS (Silver-laced).—First, J. R. Blackburn, Edward Street Mill, Preston. Second, J. Dixon, Bradford. Highly Commended, J. Crosland, jun., Wakefield.

BANTAMS (White).—First, J. Crosland, jun., Wakefield. Second, H. Adams, Beverley, Yorkshire.

BANTAMS (Black).—First, A. G. Waithman, Halifax. Second, J. Crosland, jun., Wakefield. Commended, J. Taylor, Felling Shore.

BANTAMS (any other variety).—Prize withheld.

For the best pen in the Bantam class, a Silver Medal, by a Member of the Committee, was awarded to Mr. John Crosland, Wakefield.

DUCKS (Aylesbury).—First, J. Dixon, Bradford. Second, J. Abbot, Kendal. Highly Commended, J. Price, Londonderry, Bedale, Yorkshire; H. Bolekow, Marton Hall, Middlesbro'. Commended, J. Smith, Netherton Colliery.

DUCKS (Rouen).—First, T. H. Barker, Hovingham, Yorkshire. Second, J. Rodbard, Aldwick Court, Langford, Bristol. Commended, Messrs. Bird and Beldon, West Parade, Bradford.

DUCKS (any other variety).—First, J. Dixon, Bradford. Second, S. Burn, 1, East Terrace, Whitby. Highly Commended, N. G. Lambert, Killingworth.

For the best pen in Class 25, 26, or 27, a Chest of Brookes and Sons' Exhibition Tools, by Messrs. Siddell and Hodgshon, hardwaremen, 41, Mosley Street, value £4, was awarded to Mr. Jas. Dixon, Bradford.

DUCKS (Museovy).—First, J. Stephenson, Percy Street, Newcastle. Second, J. Harrison, Spital Tongues, Newcastle. Highly Commended, A. G. Waithman, Halifax.

GESE (best Gander).—First, J. Price, Londonderry, Bedale, Yorkshire. Second, G. Baillie, jun., Mellerstain, Kelso. Highly Commended, J. Dixon, Bradford; A. Pease, Southend, Darlington.

TURKEYS.—First and Second, J. Price, Londonderry, Bedale. Highly Commended, Miss Forrester, Fallonsby. Commended, W. Carr, Cramlington; Miss Forrester, Fallonsby.

TURKEYS (best Cock).—Prize, Miss Richardson, South Acomb.

GUINEA FOWLS.—Prize, Miss Forrester, Fallonsby.

EXTRA STOCK.—Prize, J. Shorthose, Newcastle (three Cochin-China chickens). Prize, Mrs. Watkin, Freedom Cottage, Walkley, Sheffield (Sultan fowls). Prize, Mrs. E. Dodd, Rychill, Newcastle. Prize, Mrs. J. Stoke, Hexham (Polish cock and two hens). Highly Commended, N. G. Lambert, Killingworth (two Call Ducks). Commended, H. B. Priestman, Benwell House (Brahma Pootras); J. Teasdale, Welburn, Castle Howard (Brahma cock and two hens).

COTTAGER'S CLASS (Extra Prize).—First, H. Surtees, Lodge, Riding Mill. Second, M. Cooper, Helmsley, Yorkshire; Third, — Crosland, Wakefield.

PEA FOWL (best Peacock).—Prize, Miss Richardson, South Acomb.

PIGEONS.—*Carriers*.—First, E. A. Lingard, Hawkesley Hall, King's Norton. Second, J. Morrell, 38, Neasham Square, Sunderland. *Almond Tumblers*.—First, E. A. Lingard. Second, J. Morrell. *Balds or Beards*.—First, J. W. Edge, Ashton New Town, Birmingham. Second, E. A. Lingard. *Turbits*.—First, G. Fawdon, Gateshead. Second, J. Morrell. *Jacobins*.—First, J. W. Edge. Second, G. Fawdon. Commended, J. Crosland, jun., Wakefield. *Fantails*.—First, J. Robinson, Haughton-le-Skerne, Darlington. Second, S. Irwin, Gateshead. *Trumpeters*.—Prize, J. Robinson. *Croppers*.—Prize, E. A. Lingard. *Balds*.—First, J. Morrell. Second, P. H. Jones, High Street, Fulham. *Runts*.—First, E. A. Lingard. Second, P. H. Jones. Highly Commended, P. H. Jones. *Dragons*.—First, J. Healey, 11, New Road, Newcastle. Second, N. Stephenson, Blue Quarries, near Gateshead. *Blue Rocks*.—Prize, J. Price, Londonderry, Bedale. *Extra*.—First, G. Fawdon. Second, S. Irwin.

For the best pen in the Pigeon Classes, a Chest of Tools, by a Member of the Committee, was awarded to Mr. Lingard, Hawkesley Hall, King's Norton.

RABBITS.—Prize, J. Chorlton, Long Benton.

BREEDING THE AUSTRALIAN PAROQUET AND CINNAMON BELGIUM COCK CANARY.

IN December, 1856, my attention was called to a pair of Australian Paroquets. The owner finding them restless for some days, I believed them to be nesting; consequently, I procured a piece of bark eighteen inches long and five inches in diameter, and placed it upright in the corner of the cage, with a hole, made by a centrebit, in the middle, forming a kind of hollow tree. Nine days after, the hen had laid four eggs, and then, after sitting fourteen days, produced three young ones. Two of these are now alive, and can be seen at any time. It is worthy of remark, that the young ones were bred up *wholly* on *canary seed*, the old ones refusing to eat any other kind of food. They require no kind of material for building their nest.

I find no difficulty in producing the *Cinnamon cock* Canary, having proved successful in my attempts. It is *essentially necessary* to have in both parents the cinnamon strain.

Mr. Potter, of South Street, Chichester, also writes to me as follows, relative to the Cinnamon Canaries:—"At the present time I have not a Cinnamon bird; but I have, within these four years, bred four birds—three cocks and one hen, three of which were plain cinnamon, and one handsomely mottled. These were Belgian. I believe there is one at this time in London, so much prized that a large sum has been refused for it."—O. NICHOLSON, *West Street, Fareham*.

PIGEONS.

TOYS.

VARIETY 18.—THE SHIELD (*Columba Clypeata*).

German, Die Schild. Order, Deckel Taube.

THIS, again, is a German Toy variety. They derive their name from the shoulders of the wings being coloured; which mark being shield-shaped, they appear as if bearing shields.

In some parts of Germany, these Pigeons are very plentiful; and there appear to be two breeds, the one smooth-footed, and seem to owe their origin to a cross between the Turbit and a small white Pigeon; while the feather-footed breed is most likely bred from a cross between the Turbit and White Trumpeter, which latter they much resemble in general form.

The two breeds have the same markings, their wing shoulders being either black, blue, red, or yellow, either without or with white wing-bars, though, in the yellow, this latter addition is somewhat rare.

Again, many of these feather-footed Shields have turned crowns, and some even the moustache of the Trumpeter, either with or without the hood at the back of the head. These are known in Germany by various names. Herr Gottlob Neumeister informs us, that these cross-bred Trumpeter Shields rarely trumpet; yet some, without either turned crowns or moustache, trumpet tolerably well.

In direct opposition to these, are the white-shouldered, or white Shields. These are usually red, or yellow Pigeons, with clear white wing-shoulders, and much resembling a Trumpeter in general form.

In France, I have also met with a variety of Runt, smooth-headed and clean-footed, of a red plumage, or very deep yellow, the shoulders of the wings being white, more or less accurately coloured. They were designated "*Tigre rouge*;" the young of these last were all red, and they did not attain their white shoulders till the first moult. They were of good size.

VARIETY 19.—THE PIGEONS MIROITES (*Columba specularis*).



THIS variety of Pigeon I am not at all acquainted with; but the following description I have endeavoured to translate from MM. Boitard and Corbie's French work on Pigeons:—

"It is very remarkable that none of the authors who have written on Pigeons have spoken of this breed, so remarkable for the beautiful colours of its plumage. Is it because they have never come under their notice? But, nevertheless, although not very common, all the amateurs know it, and many possess some varieties. Or is it that they do not regard it as a pure breed? This cannot be the reason, because these Pigeons are positively those which they call true bred, since they cannot be crossed with any other variety, even which resemble them, without being lost for ever. These birds have the general form of the Runts, and they are easily known by the striking beauty of their plumage. They never have cere round the eyes, and their irides are commonly yellow.

"The Red Pigeon *Miroité* is of a red like the blood of a bullock, terminating at eight lines of the end of the quill feathers of the wings and tail, in a bar of greyish white, half an inch in width. The ends of the feathers are of a red colour, a little clearer than the rest of the body. Eyes like a cock; that is to say, the irides yellow. This charming variety is of the common size, very productive, and merits all the respect and care of the amateurs.

"The Yellow Pigeon *Miroité*. This beautiful bird does not differ from the preceding, except that the ground of the plumage is yellow for the vest, it is *miroité*;* the same on the principal feathers and the tail. It has the same fecundity.

"The little Pigeon *Miroité* resembles the preceding, but much smaller—about the size of the Dovehouse Pigeon. This charming bird breeds well."

VARIETY 20.—THE ICE PIGEON (*Columba glacialis*).

German, Die Eis Taube.

THE last variety of Toy Pigeon, to which I shall allude, is the Ice Pigeon, a German, and it derives its name from the superabundance of condition, or whitish powder which pervades the plumage, which is thought to give the individuals the appearance of being iced or frosted. In colour they are a

clear light blue, with a black bar across the end of the tail, and two fine bars, either black or white, across the wings. They are about the size of a Dovehouse Pigeon, rather stouter made. The feet heavily feathered, with but little gloss on the neck, and having rather more of the ruddy shade on the breast, like the Ring Dove (*Columba Palumba*). The irides are gravel coloured, and the variety rather scarce.

A sub-variety is known in Germany as *Die Hohltaube*, from its plumage, reminding one of the Stock Dove (*Columba *Ænas**). These much resemble the preceding, except that, perhaps, they are rather a lighter blue; have no wing-bars, and, except a dull bar across the tail, being without markings. —B. P. BRENT.

Erratum.—For "Schwabben," in the German name of the Swallow Pigeon, read "Schwalben."

OUR LETTER BOX.

MR. WORRALL AND OTHERS, DEFENSIVE.—We have letters from Mr. Worrall, very temperate; from "A Member of the Liverpool Committee;" from the Hon. W. W. Vernon; and from Mr. John Douglas; all very good, and to the purpose. They shall all appear next week. We have to apologise to these and many other correspondents for this delay.

WASHING PIGEONS (*W. J. S.*).—You may easily wash the feathers of your Pigeons with lukewarm water and soap, put on a piece of flannel. When the soap is washed out, and the feathers are clean, put the bird in a basket with clean straw, and put it before a fire till the bird is dry.

MR. ARCHER'S SILVER-PENCILLED HAMBURGIS (*A. G.*).—Mr. Archer's Hamburgs are the perfection of the breed. The cocks are nearly white, with simply a little marking at the tip of the wing; very white ear-lobes; each feather in the tail black, edged with silver; well-pointed and firmly-set combs, spiked behind, and the spike inclining upwards. The pullets have clear white hackles, accurately pencilled bodies, white ear-lobes, bright red combs, and pencilled tails. This gentleman deserves the thanks of all Hamburg breeders. He has not only brought them to perfection in feather, but he has redeemed them from the accusation of being sickly birds. We should tell you, that till they get their adult plumage, the cocks are speckled in many parts of their bodies.

QUERIES ABOUT COCHIN-CHINAS (*A. S. B.*).—"1. Is a bird permanently injured by having a fit? I have a Cochin cockerel which had one the other day. He had recently come from a free and bleak run, into a sheltered yard, and, soon after this change, the weather became excessively hot. I bled him, and put him in a cool place, and gave him some restorative pills each day, after the first one or two days. He scoured very much, with much green washy matter. He is gradually recovering the use of his legs. If he recovers he would be fit for show; but will he be, in any probability, sound or useful." [Yes, he may live for years, and will be good as a stock bird.] "2. Do Cochins lay better in a hard winter, than a mild one? My experience makes me believe they do so." [We observe no difference. They decline as layers as they become older.] "3. I have a hen that has only just cleared her moulting, and her sister hen that still looks ragged. They are healthy birds, not more than two years (or twenty months) old. Is this a common thing?" [No; very unusual.]

BREEDING LARGE DUCKS.—A Subscriber to *The Cottage Gardener* would be glad if some one, who understands the rearing of Ducks, would let him know the way to treat young Ducks, which are to be bred for size, either Aylesbury or Rouens. [Many of our readers would be glad to obtain this information, and we shall be obliged by any of our readers imparting it.—ED.]

LONDON MARKETS.—APRIL 12TH.

COVENT GARDEN.

A fair supply of all descriptions of produce has been to hand during the last week or two, but seldom has Easter passed over with so small an amount of business doing. *Asparagus* and *Sea-kale* moderate in price. *French Beans* merely nominal, so large a supply on hand. Some good samples of early *Grapes* may be had at prices ranging from 15s. to 25s. per lb. *Strawberries*, 1s. and 1s. 6d. per oz. *Pines* from 6s. to 10s. per lb. From the Continent, our usual consignments; and from Cornwall, an excellent parcel of *Broccoli*. The early *Potatoes* not yet coming very freely; the markets for old are heavily stocked; prices range from £7 10s. to £8 per ton.

POULTRY.


The Easter holidays, and the absence of the Court from London, have lessened the demand, and prevented any rise in prices. If there were much demand, the scarcity of good poultry would cause it to be very dear.

	Each.		Each.
Large Fowls ...	6s. 0d. to 6s. 6d.	Guinea Fowls .	2s. 6d. to 3s. 3d.
Small ditto.....	4 6 „ 5 6	Turkeys	0 0 „ 0 0
Chickens.....	3 0 „ 4 6	Pigeons	0 9 „ 0 10
Goslings	7 6 „ 8 0	Rabbits	1 4 „ 1 5
Ducklings	3 6 „ 4 3	Wild ditto	0 10 „ 0 11

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* I have been unable to translate the word *miroité*. A French gentleman, to whom I applied, informed me it meant composed of three colours, of which two were blended in one.

WEEKLY CALENDAR.

Day of Mth	Day of Week.	APRIL 20—26, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
20	TU	Carnations.	30.229—30.215	67—31	S.W.	—	56 af 4	2 af 7	2 16		1 8	110
21	W	Cyclamens.	30.239—30.196	62—42	N.W.	—	54 4	4 7	2 42	8	1 21	111
22	TH	Callistemon phœnicium.	30.065—29.952	52—38	W.	.20	52 4	5 7	3 3	9	1 33	112
23	F	Corozema Henchmanii.	30.022—29.927	48—24	N.E.	.02	50 4	7 7	3 16	10	1 45	113
24	S	Chorozema macrophylla.	29.974—29.810	49—35	E.	—	48 4	8 7	3 28	11	1 57	114
25	SUN	3 SUN. AFT. EAST. ST. MARK.	29.720—29.632	48—33	S.E.	.02	46 4	10 7	3 39	12	2 8	115
26	M	[PRINCESS ALICE BORN.]	30.011—29.838	46—35	E.	—	44 4	12 7	3 50	13	2 18	116

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 58.7° and 37.1°, respectively. The greatest heat, 80°, occurred on the 25th, in 1840; and the lowest cold, 18°, on the 24th, in 1854. During the period 121 days were fine, and on 96 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

CABBAGES.—Sow, if not done last week.

CHAMOMILE may now be increased by dividing the roots.

CAULIFLOWERS.—Finish planting out the main crops from frames and warm borders.

CELERY.—Sow for a successional crop, if not done before.

CUCUMBERS.—Add fresh linings to the beds, and fork them up frequently, which will preserve a moderate heat in the beds for some time; attention to be given to stopping the shoots, and the admission of air.

DILL.—Sow, if wanted.

FENNEL.—Sow, or increase it by slips of the roots.

LETTUCES.—Sow; the *Bath* and *Paris Coss* are good sorts. Water the spring-sown in dry weather, and loosen the soil around them.

MARJORAM.—Sow.

ONIONS.—Thin the autumn-sown, and replant them, if wanted, into rows nine inches apart; the ground to be slightly manured with soot, or the plants to be occasionally watered with soot water in dry weather. Sow some to draw young.

PEAS.—Earth-up and stick the advancing crops. A little soot, strewed at each side of the row before earthing-up, will prevent the attacks of slugs.

POT and SWEET HERBS.—Plant slips, offsets, or cuttings of Balm, Burnet, Hyssop, Pennyroyal, Lavender, Rue, Sage, Sorrel, Savory, Tansy, and Thyme.

RADISHES.—Sow the Turnip-rooted sorts, to be watered in dry weather, to produce them of a mild and succulent quality.

SPINACH.—Sow the round-leaved sort once a fortnight for successional crops, in drills between rows of Cabbages, Peas, Beans, &c.

WEEDS.—Hand-weed all beds of small plants before the plants are injured by them. Destroy groundsel by all means.

FRUIT GARDEN.

APRICOTS.—Thin the young fruit, if in clusters. Caterpillars to be looked after in good time, before they devour the young leaves of fruit trees; their webs will be a clue to their whereabouts.

FRUIT TREES.—Disbudding is an operation worthy of very particular attention; it prevents the development of useless shoots, at the expense of those which should be preserved; therefore, it is not advisable to wait until a badly-placed shoot is developed, but to remove it early, taking off with the finger and thumb foreright buds, and others that are not properly situated for laying in. Caution is also required to remove only a few at one time. A little at one time, and often, should be the practice during the summer, and then it is only a few of the most vigorous shoots to be removed at one time.

The final removal of any material, applied as a pro-

tection to wall trees, should not be made until the fruit is fairly set.

GRAFTED TREES.—Look over and remove all shoots below the scion.

WALL TREES in bloom to be protected from bleak cutting winds.

FLOWER GARDEN.

AURICULAS.—Remove from the frames, as soon as they begin to show colour, to a sheltered and shady situation under handglasses, raised from the ground nearly to the tops of the pots, to protect them from cold and wind, and in frosty nights with mats.

CARNATIONS and PICOTEEs to be placed in a sheltered spot until a general change takes place in the weather, watering when necessary, to be given in the morning.

EVERGREENS.—Plant and prune, and finish planting layers of evergreen shrubs and trees, and late-growing deciduous kinds.

PANSIES.—Sow seed for autumnal flowering. Put in cuttings of favourite kinds. The Pansy delights in a rich, loamy soil, and a shady situation.

PERENNIALS of all sorts to be sown for flowering next year.

Rolling and sweeping lawns should now be regularly attended to, in suitable weather. Roll walks after showers, to get them firm before dry weather sets in. Destroy insects, and especially pick the grubs from the leaves of Rose trees; for, if neglected, deformed or inferior blooms will be the consequence. Lay grass turf, or sow seed where wanted.

WILLIAM KEANE.

CRYSTAL PALACE FLORAL BAZAAR.

THIS "Floral Bazaar," being held one week only before the grand spring competition meeting of the Horticultural Society, in the St. James's Hall, London, together with the lateness of the spring, and the coldness of April, was an "untoward" event; none of the great prize fanciers from London could venture out, for fear of losing the market between two stools; and country dealers, dreading both the weather and the London influence of prizes, reserved their force and strength for the retaking of the old citadel at Chiswick, the accounts of which event you may expect to hear of soon by an early telegram. Mr. Standish, of Bagshot, was the only influential nurseryman from the provinces who ventured a stall at the Bazaar; and if his luck has been as good as it appeared while I was noting his Skimmias, and other eastern novelties, he must have stored his magazine as well as Sir H. Lawrence did that of Lucknow.

Mr. Smith, of Norwood, next door to the Crystal Palace, had a very large stock of very beautifully-grown plants in bloom, perhaps 600 or 700, all of "furnishing" plants, in bloom and bloom bud. His self Cinerarias are particularly good, and his forced

Gauntlet Geraniums show him up at the head of the forcing department. *Gauntlet* is, undoubtedly, the very best of all the forcing Geraniums, and is the very worst plant among all the forcing plants to "do" well. Ten thousand *Gauntlets* are forced every winter and spring; but, until the last few years, we could never see a plant of it on sale. They were all so gawky and so straggling, that no one would buy them, but would give more money for the cut flowers than the plants were worth; but anything which will pay in London is sure and certain to succeed at last, and so *Gauntlet* may be had now as closely grown, and as "stubby," and short-jointed as *Alba multiflora*, or any of the race, as any one might see at this Bazaar.

Fairy Roses, fancy Pelargoniums, Calceolarias, Mimuluses, Heaths, variegated and plain-leaved scarlet Geraniums, Azaleas, Verbenas, *Acacia armata*, purple Diosma, Cactuses, double Tulips, Hyacinths, all in, or coming into bloom, and selling from a shilling to half-a-crown the plants, were the bulk of Mr. Smith's stall at the Bazaar.

Opposite to Mr. Smith's stall, Mr. Woodroof, the great grower of bedding plants, for the trade, round London, had an equal extent. His plants, also, were remarkably well grown, and well flowered, but differed very little in kinds from the names above. There were six thousand and a half of visitors, and five thousand of them were probably from London, and out of that number, say that the one half had gardens and pot plants of their own. Well, the style of growing *forced plants* for "spring flowers," as were shown in these two collections, was a better sampler for the greater number of the visitors, than that of the great many exhibition plants anywhere.

Mr. Standish had his stall purposely to take orders. He had a few large specimens of *Skimmia Japonica* in bloom and fruit, to show the style of it. Plants of it of different sizes, down to shilling plants; and he was promising to send it out by the thousands next autumn at so much per dozen, or score, or hundred, or thousand. His *Azaleas*, *vittata* and *narcissiflora*, have two very excellent qualities, both force with certainty, and no trouble. *Vittata* is quite hardy, and *narcissiflora* lasts from six to eight weeks in bloom in a drawing-room.

All this, and all kinds of gossip, are allowable at a Bazaar, and one learns how the wind blows without pinching his ears at these gatherings. *Chamærops humilis argenteus* was the greatest novelty in Mr. Standish's stall. It is the dwarf Fan Palm from Algiers, with a short silvery nap on the underside of the leaves. The stems were about four feet high, and the young heads just formed, for they have not been long introduced, and they are supposed to be 100 years old. *Azalea amœna*, the hose-in-hose flower, has crossed with *lateritia* and other sorts; but the seedlings take after the dwarf habit of *amœna*, whether itself be made the father or the mother of the cross; therefore, we shall have an *amœna* section very shortly, for there is no end to the seedlings already, and Mr. Standish is going to push out a collection of six best kinds of them next autumn. *Amœna-lateritia* and *Amœna-grandiflora* were sold last year, by him, for the first time. The whole of this section are hardy plants, and with a few more turns of the cross into the Sikkim Rhododendrons, particularly *Rhododendron ciliatum*, in a few years we shall have as fine hardy Azaleas as we have of exhibition kinds. We shall also have them from the size of *Rhododendron ferrugineum*, or *hirsutum*, to that of the largest of the *Sinensis* breed.

The next plants of importance for which Mr. Standish opened the Bazaar, were the great eastern evergreen *Berberis*, the most beautiful of evergreens. He says the fruit of *Nepalensis* is the handsomest of them all, and

that *Bealei* is the strongest and fastest grower of them. He also told me, what I had already insisted on, that they are best in, and under, the shades of trees, or rocks, or waterfalls, or anywhere out of the sun, if the place is not too dry. *Skimmia Japonica* likes the shade also to the same degree. It will, therefore, be an excellent plant to cover shady banks with, as *Cotoneaster microphylla* is fitted for clothing banks facing the sun. *Berberis intermedia* is the next cheapest, and *trifurca* is the highest priced of this group.

The rest of his samples consisted of young Araucarias, Azaleas, Rhododendrons, and more common things in that style.

There was one lot of monstrously bad grown Hyacinths, from some one, which should not have been admitted there. They were not worth the pots they were growing in.

In a collection of toy Cactuses, and other succulents, in a stall held by a foreigner of the name of Pfersdorff, of 73, South Row, Kensal New Town, one might pick up a few real gems. I once had eight hundred kinds of Cactuses, and knew the names of most of them; and I once knew an amateur pay sixty guineas for one specimen of *Mammillaria nivea cristata*, the first then in England, if not in Europe, and there are one or two good plants of it, in that lot, for a few shillings. The common *Opuntia cylindrica* is here also in a *cristata* shape, or in the form of a snake turned to a cock's comb; also quite cheap, and very rare and singular. *Mammillaria Schelhausii* is another rare gem, with hooked spines and silky senilis-like hair all over it, in the way of *Mammillaria Bocosiana*, but much finer and better-looking. *Mammillaria Schiediana* was another very fine kind. I often think how curious it is, or was, that the public taste did not take to this tribe of plants; but the enormous prices asked for them, twenty years back, was enough to scare people from them. I once had a couple of thousand seedlings of some of the rarest kinds of them, which were then valued at over a thousand pounds, by judges who are alive and distinguished to this day. But, one seldom sees any of them now but as toy plants.

Mr. Hally, of Blackheath, had another stall of large and small Camellias, Epæris, Aphelexis, Cytisus, the dwarfest Lycopods, and others; and one of the most singular flowered of all the Sikkim Rhododendrons, the colour of the flower, all over, was a dingy kind of violet; the name is *Rhododendron campylocarpum*.

Mr. Ponsford, of Brixton, had a stall of the usual furnishing plants. Mr. James Wood, of Norwood, had a nice collection of variegated plants, and another collection of Alpine plants. Mr. Attwood, florist, Camberwell, a stall of furnishing plants.

Mr. Christmas, Green Lane, Camberwell, had three blooms of a seedling Camellia, of some merit; a cupped red flower called *Victoria Regina*.

Messrs. Hay and Sangster, nurserymen, Newington Butts, had another stall of odds and ends, among which were some *Wellingtonia gigantea*, a foot high from the pot, marked 15s. a piece.

The Bazaar was held in the east end of the transept, where the Cottager's collections were placed last year, and the Crystal Palace gardeners made three large handsome groups in that part, in aid of the features of the occasion. A large group of standard Rhododendrons, Camellias, Norfolk Island Pines, with a broad border of spring bulbs in front of them, just under the east-end orchestra, was remarkably well placed for effect; and a large circle of spring-forced flowers at the other end was greatly so, in the furnishing style.

The marble basins round the crystal fountain are still as gay, and now more varied with different kinds of flowers, as they were on my last visit. The crystal fountain itself has been taken to pieces, cleaned like a watch, and set up again. It is made up of a "thousand pieces," which are serewed together. The beds and boxes for the Water Lilies have been new earthed, and the earth looks as strong as that of the best land for Beans, on a farm. Great improvements have been

made in the root-work beds at the south end, and several alterations are still going on in the victualling department.

Fuchsias are the best of all plants to hold in the hanging baskets. Cobæas the best climbers for them. *Ivy-leaved* Geraniums the best trailers; and *Unique* the best of all the bedders for hanging down.

Jasminum nudiflorum, not cut like other Jasmines, but on the same principle as a Gooseberry; that is, all the wood, young or old, which is to be cut, is cut out entirely, not shortened, and what young wood is left, is trained in at full length. *Stauntonia latifolia* is thickly in flower-bud in the colonnade. It flowers on last year's wood, and that is a safe guide how to prune it. All the climbers were breaking strongly in the colonnade, and the border was free from other plants; the cold winds had not affected the Deodars or Araucarias exposed in the open garden; but the leaves on the young shoots of the common and Portugal Laurels were scorched here, and in most places round London. The double-flowering Gorse was in bloom on the banks; the *Magnolia conspicua* was lily-white in the shrubberies; the *Cydonia* and *Ribes sanguineum* were the other hardy shrubs in bloom. There will hardly be time for spring flowers to do much till it is time to bed out. The *Tree Pæonias*, are still covered slightly with fern; and indoors all the plants seem on the move for a strong growth. The Camellias are nearly over, and the Rhododendrons are not out yet.

The following *Acacias* are still in bloom—*pubescens*, fine; *graveolens*, the lightest of them all, with a sheet of light canary coloured bloom; *hybrida*, a marked improvement on *armata*; *virgata*, a very slender grower as the name implies; *oxycedrus*, also slender and light yellow bloom; *floribunda*; *verticillata* one of the latest; *juniperina*, a close slender grower; *longifolia*, very fine, very strong, and with long broad foliage; and *dodonæfolia*, another slender kind.

Curculigo recurvata, a fine-leaved herbaceous plant, seldom seen, is doing well among roots in the cold end; *Euonymus fimbriatus*, a fine evergreen, the same; *Viburnum rugosum*, the same; the Camphor tree, *Laurus camphora*, and *Drimys Winteri*, the same also; *Stadmannia Australis*, with leaves larger than those of *Rhopala*, as hardy as a Fuchsia; *Anopterus glandulosus*, a charming dwarf stocky evergreen in full bloom, and as hardy as, perhaps, *Escallonia macrantha*, to which it is related, but the flowers are more in the way of an Arbutus, but larger. *Agnostus sinuata*, growing beautifully by its side; *Blandfordia grandiflora* in a large healthy mass, with half drooping leaves eighteen inches long, a noble thing when in bloom. But there is no end to the riches of this part of the collection here.

D. BEATON.

GLOXINIAS AND ACHIMENES.

(Continued from page 16.)

ONE of the plates of "The Illustrated Bouquet," in the number for last September, is occupied with ten new seedling Gloxinias, which were raised in Germany by the gardener of the Grand Duke of Saxe Weimar. The leaves and flowers are drawn and coloured by Mr. Andrews, in the first style of art.

This brings me to the motto for my coat of arms "*Doctrinam juventulis*," which means, in plain English, that my mission is to "teach the young idea," at whatever period of life the idea of my craft may be taken up. Now, after a careful perusal of all the illustrated works on gardening and botany, for the last 30 years, including, in the order of time, Wallich's great work on "Rare Indian Plants," and Bateman's and Lindley's great works on the "Orchids;" I can confidently assert, that "The Floral Cabinet," by Knowles and Westmacote, of Birmingham, was the greatest favourite among ladies in the drawing-room; but, during that whole period, we had not a single work which might be called a drawing-room book on flowers. Too much paint, or too much dog Latin, or too much of the "stupid plants" were in all our serials during that period; therefore, the ladies could not, and did not "take" to them, and what the ladies do not take in

hand about flowers, flower gardening, and flower books, is as sure to go to the dogs, in the long run, as it is that we have got a drawing-room book on flowers at last, in this "Illustrated Bouquet," which is got up, as I have just said, in the first style of art, by the first artists of the age, without a weed, or a word of Latin from end to end, except where a hard name of a plant might be so called. There are three quarterly numbers of this illustrated work issued—last June, September, and February, with five large "Bouquets" in each. The Bouquet of Gloxinias has ten kinds in it. That of new Fuchsias, last February, has four most splendid flowers, two light and two dark kinds; *Rose of Castile* and *Guiding*, being the two whites; and *Prince Frederick William of Prussia* and *Loch Katrine*, the two dark ones. *Begonia Rex* occupies one page itself, as also does a magnificent figure of *Eucharis amazonica*; another Bouquet is filled up with two new large double Petunias, which were shown last summer at the Regent's Park, by Mr. Grieves, of Culford Hall, one of which is compared with that of a double Hollyhock, the other with a Camellia-flowered Balsam, together with a new hybrid Begonia, between *Fuchsioides* and *Ingrami*, "a fine addition to the shrubby-habited Begonias which are in the hands of Messrs. Bainbridge and Hewison, Nurserymen, York." The new *Gesnera cinnabarina* makes a "Bouquet" of itself, and a most brilliant nosegay it is. *Gesnera densiflora*, another new one, introduced by Linden, in the way of *elongata* and *Monochætum ensiferum*, make up another gorgeous picture of a nosegay of rose, orange, crimson, scarlet, and yellow, with two shades of green leaves on the white ground of the page; altogether a drawing-room drawing, and the written account is plain common sense, and business-like, while the information about culture, propagation, and the proper kinds to grow, read exactly as if it were printed from a large memorandum book full of dog's-ears—but looking fresh from the potting bench, or from a shelf in the propagating house—all simple, sound, and single-handed, that is to say, nothing is taken for granted, but everything is tried and proved in the establishment before it is recommended, just as we do in the Experimental Garden. None but the best kinds of the most popular plants are figured in these "Illustrated Bouquets," and the best selections of each family are given under each Bouquet.

Those which come nearest to my favourite Gloxinias, are the Achimenes, which we have treated this winter in all respects like the Gloxinias, and which we mean to prove how long they may be kept dormant, without any sensible diminution of their native vigour. If we can keep strong "roots," of these tribes, in close rough paper bags, entirely free from the influence of the air, from the end of October to late in May, as, I believe, may be very easily accomplished, we shall confer a boon on thousands who have not yet thought of such aristocratic flowers. A common cold frame, of one light, from which bedding plants have been removed by the middle of May, or say by the 20th of May, would hold 100 Gloxinias and 500 Achimenes for a month, and by that time they would be in full feather, and just as good as if they were started in a new Cucumber-bed in February or March; and that without one farthing of expense for heat, as by keeping the glass on all day and night, with a little air to keep down extreme heat, the coldest frame may be made a "forcing stove," and that the best kind of forcing in the world, as having no artificial heat at night; all the Gloxinias and Achimenes may thus be had as easily as by forcing pits earlier in the season, and as all the best kinds of both families will be found in my report of the Wellington Road Nursery, I need not repeat them here.

D. BEATON.

THE CABBAGEWORTS, AND HOW TO SUPPLY THEM TO A FAMILY ALL THE YEAR.

THERE can be no doubt that of all the vegetables we possess, not one is equal to this important family. We all know that Peas, Asparagus, &c., are considered by many as more dainty; but then, neither of these, by ordinary culture, can be had above four or five months in the year; whilst the Cabbageworts may be had all the year round. But then, observe, what a range they possess as to kinds. Let us look over the chief families, and, after that, I will talk over their characters, &c., as to a year's supply. Let me begin at the very head of the tribe—the Cauliflower; then pass on through all the Broccolis; which, for simplicity sake, I may classify into earlier, middle season, and so on to the late or spring Broccolis. Then we may come to the true Cabbage family, thence pass on to Brussels Sprouts, Green Kale, and sundry other Kales, with the Savoy.

I will take them in the order I have named them.

To obtain the earliest CAULIFLOWERS, under glasses, they are sown at the end of August. These are mostly preserved in frames now-a-days; and what remains at the end of February, after planting a second size in the open ground to succeed those under the glasses, may be made a succession, by pulling them up and throwing them on the ground, to check for a day or so; then to be pricked out in the shade of a wall, or fence. They will then be weeks behind those planted in a warm spot. A sowing in the middle of February, in a box, in a hothouse, will succeed these, and secures a succession from May to the end of August. We now want to provide an autumn and winter supply. A sowing made at the end of May, and a second in the second week of June, will continue a supply until Christmas, or later, by discreet protection.

Now we come to the BROCCOLIS, and it really requires a well practised eye to handle them. But I shall, in this, pass by all fanciful names, which are not very descriptive of their habits, and apt to mislead, and speak of them according to the seasons, as before suggested, viz., early, middle season, and late; and, as a provision from the September, in one year, to the beginning of June in the next. I shall, therefore, pay regard to those I know will do so. First, then, how to get them in September. There is no class equal to the Capes, when true, for this purpose; and the best practice I have ever seen to accomplish this, is by sowing them in drills, about two feet apart, the seed deposited very thinly along the drills. When the plants came to be thinned, it was easy to make a selection, for this kind is very apt to run off. The shortest legged plants are those to be reserved, and such as have short joints between the foliage; they are left at about a foot apart. In a border thus adapted to them, it is scarcely possible to miss a dish every day, if necessary, from the first week of September until the early part of November, if the seed be sown about the second week in June. One-half may be of the *Early Purple Cape*, and the other the *White Cape*. The next in order, is the *Early Sprouting Broccoli*. This sown in the middle of April, will produce sprouts from November to February. This brings us to the true winter Broccolis—these should produce fine white heads, like Cauliflowers, early in January, if the weather be mild, and continue according to the state of it through January, and in February especially, and into March. Of such, as types of newer varieties, I may mention the *Cornish Broccoli*, *Snow's Winter*, the *Protecting*, &c. These should be sown at two or three distinct periods, say in the first week of April, and again in the third week; perhaps a few in the beginning of May. This class of Broccolis is invaluable, as they produce fine white heads with the

least possible excitement. Especial care should be taken, however, to get them pricked out in good time, to be rendered robust. This it is which renders them so easily excitable during mild periods in the winter. The last class, the later spring Broccolis, may be typified by such kinds as the true *Wilcove*, the *Somers's Particular Late White*, &c. These are not to be moved to head under any circumstances of culture, until the end of April, and from that period they should take up the supply, until the handglass Cauliflowers come to their relief in the course of May. This junction I have formed many times in the course of my practice, so that there was no gap between the Broccolis and the Cauliflowers.

We now pass on to the TRUE CABBAGES, and may point to their habits, as to a continual succession. The dwarf and compact kinds are principally sown in these times, and are by far the best adapted for general garden purposes. The earliest spring Cabbages are produced by the end of April, or beginning of May; and these, from a sowing made in the first or second week in August. If a constant succession is desired, a sowing should be made in the beginning of March; these will produce through July and August; and a third sowing in the middle of May, will go through September and October. Out of this class are obtained, what the Londoners call Coleworts. These are a most valuable green. The most compact and early-hearting kind of Cabbages are selected for this purpose, and their peculiarity is a consequence of the season at which they are produced, together with the period of sowing. Everybody knows that we cannot, if desirable, have such white-hearted Cabbages in December, January, and February, as we can in July and August; be the kind what it may. Indeed, could they be produced, they would not withstand the severity of the winter. Coleworts, then, are intended for a long winter's supply, and to represent, as far as is desirable, young early spring Cabbages. These are sown at two periods, viz., the third week in June, and the second week in July. All possible pains should be taken with this form of Cabbage: anybody can produce gross summer Cabbages by using plenty of manure; but these both require, and deserve, some extra management. They should, by all means, be sown in drills thinly, in order to make stout plants. The soil they are planted in, is generally that recently occupied by some summer crops, but it should be well manured with rotten manure, which, for this crop, need not be dug in deep, but rather forked in for about eight inches in depth, and well mingled with the soil. Rapid growth is the object, and on land thus prepared they will grow with surpassing celerity, especially if the autumn be somewhat moist. Coleworts, of this age, may be planted very close together, about fifteen inches between the rows, and one foot between the plants.

BRUSSELS SPROUTS, the next in order, are well known as one of the most useful forms of "greens" in cultivation. They may be obtained in the highest perfection from October until April; although they may be produced in September and in April, yet they, through the exciting character of those periods, speedily lose that neat button-like appearance for which they are so highly esteemed. But they are, moreover, of most delicate texture, and withal, under high culture, will produce as much eatable material, on a given space of land, as any green in existence; perhaps, more than any other, as they will crop somewhat closely. No garden in Europe should be without them; indeed few, I suppose, are. The first sowing of these should be made at the beginning of March; they will "button," as it is termed, in the end of September, and through October. A second sowing may be made at the beginning of April; these will supply the table through

November and December; and a third and last sowing, in the early part of May, to supply a reserve for spring—not to be used until the middle of February. They delight in a generous or rich soil, and should be sown in drills thinly. The plant grows perfectly upright, and a distance of eighteen inches between the drills, and fifteen between the plants, is amply sufficient. In gathering them, it is well to leave the crown as a protector until the spring, as it forms a complete canopy, and both protects and coaxes the buttons on the sides of the stems.

GREEN KALE is next in order; and certainly one of the most generally cultivated winter greens, in country places, that we possess: this may be called peculiarly the poor man's green. It will succeed on almost any soil, with a little manure; and two sowings are sufficient for any garden, be the demand what it may. One sowing may be made in the third week of March, and a second in the middle of April. The plants may be finally planted at two feet between the rows, and sixteen inches between the plants.

THE SAVOY.—This is a highly esteemed green, and may be obtained either with firm heads like Cabbages, or in the form termed Savoy Coleworts; the latter signifying heads only half formed and of smaller size: these are more esteemed by our gentry, or their cooks, than those with hard heads and larger, as making a neater dish. There are two or three kinds, indeed several varieties; but, for simplicity's sake, I would point to the large, or *Drumhead*, and the dwarf Savoys, the latter divided into Green and Yellow. The *Ulm* Savoy is an excellent dwarf kind, for small families. Savoys may be obtained in perfection from September until May; they are, however, much more tender after a little frosty weather than before. To produce Savoys from September to November, sow in the second week in March; and to produce a succession through the winter, sow in the second week in April. Savoys for Coleworts, as they are termed, should be of the very dwarfish kinds, and should not be sown before the beginning of May. I have had abundance of neat little Savoy Coleworts all the winter, by taking the mere refuse of the seed-beds of the April sowing, and planting them out in the early part of August; topping their loose foliage half off, and planting them in drills, nine inches apart in the drills. Savoys should be sown very thinly in drills, as their foliage is large; and, if too thick, they become long legged, and this spoils their whole character. Savoys for full crops require to be in drills quite two feet apart, and the plants nearly eighteen inches distant in the row.

I have now gone through the principal families of Cabbageworts in British gardens, and must beg to offer a few remarks, of a general character, in conclusion. All these tribes are much improved by what is called pricking them out; that is, transplanting them when little plants. They all produce finer heads with shorter stems, and are less liable to be torn about with storms; besides being more productive, and better economising space. Nearly all of them are, under certain circumstances, liable to club; and it is advisable, in old gardens, to select the poorest soil to raise the plants in, and to dig deep, bringing up fresh soil. All kinds of charred materials, from the rubbish-yard, are of much benefit to them, whether in the seed-bed or when planted out; in the latter case, if club is dreaded, boring holes, and filling them with charred materials and fresh maiden soil, and inserting the plant in the midst.

It is pretty well known, that all Cabbageworts are liable to attacks of caterpillars, and that the latter are the produce of the eggs of butterflies. I would advise all to destroy as many butterflies as possible, when they are in their laying season; at that period (about the

middle of August), they may be seen constantly hovering over rows of the various Cabbageworts.

R. ERRINGTON.

QUERIES AND ANSWERS.

AUSTRALIAN SEEDS—CLIANTHUS PUNICEUS.

"In THE COTTAGE GARDENER of March 30th, under the head 'To Correspondents,' you say, respecting Australian seeds, that they are about worthless. A brother returning from there, some eighteen months since, brought a lot home, several of which I have now growing very nicely.

"I have several plants of the *Sarsaparilla* now in bloom, also *Acacias* and *Mimosas*, &c. The *Sarsaparilla* seeds require to be soaked in boiling water, to make them grow. This should be generally known, as several of the Australian seeds will not germinate without such treatment. I have several of the *Gloria Pea*, grown from seed from Tasmania last year. Can you give me their treatment to make them bloom well?"
—H. L. E.

[Some of the very best of our greenhouse plants come from Australia, and some of the very worst of our greenhouse plants come from the same region also. You do not know the names of the Australian seeds which we said were not worth their pots, and, therefore, can be no judge of whether we were right or wrong. But what is the *Sarsaparilla* of Australia? The drug called *sarsaparilla* is the produce of seven or eight or more kinds of one plant from different parts of the world, and called *Smilax*: *Smilax medica*, produces the *Sarsaparilla* of Vera Cruz; *Smilax syphilitica*, the Brazilian *Sarsaparilla*; *Smilax officinalis* gives the best *sarsaparilla* in the English market, from the West Indies; and there is a *Smilax* called "Sweet Tea," in New Holland, the *Smilax glycyphylla*, from which *sarsaparilla* of excellent quality has been sent home. But not one of these plants is worth a pot, as a garden object, or worth the trouble of raising from seeds in this country. Probably your Australian *Sarsaparilla* is quite a different thing, with the settler's name, which name is of no use here.

The *Gloria Pea* we take to be the Parrot Beak flower of New Zealand, *Clanthus puniceus*, and, if so, it requires the very same treatment as the Myrtle. Good holding soil, plenty of room at the roots, out of doors from May to October, and to be merely secured from frost. All the *Acacias*, *Mimosas*, and, indeed, all the Pea-flowering plants from most parts of the world, will stand a touch of boiling water, and many of them will hardly vegetate without a dip in boiling water, a fact which is as common to gardeners as their pruning knives, but not the less interesting nevertheless.]

GERANIUMS, CALCEOLARIAS, AND CINERARIAS, TO BLOOM IN JUNE.

"I wish to have some Geraniums, Cinerarias, and Calceolarias in bloom the first day of June; some are now showing flower. May I stop them all back, and until when?"—F. C.

[Stop the Geraniums, and give them another shift; but you must not stop the Cinerarias, nor the Calceolarias; if you turn out both kinds to a cold place, or north side of a house or wall, and take care of them at night from the frost, you will make sure of the Calceolarias, and stand a chance for the Cinerarias. But you must judge for yourself by the middle of May whether the plants want help, so as to be in full bloom by the required day. All depends on the weather. If it is very hot, you will be about right; and if it is very much the contrary, the plants may want the stimulus of a close greenhouse, or cold pit, for the last ten days of May.]

DAHLIA TRAINING AND CULTURE.

"1. Is it possible to peg down any sort of Dahlia in a bed, as was done last year in the Crystal Palace? If not, could you inform me as to what sorts are suitable for that purpose?"

"2. Does too much manure, or too little, cause Dahlias to run to stalk (though in an open situation), and to have

flowers little larger than Asters? Or, is this owing to the roots being too old?

"3. How are Dahlias to be propagated? I have heard that cuttings, taken with a piece of root attached, will strike in a common greenhouse without bottom heat."—G. H. W.

[1. All Dahlias may be pegged down to the ground, just as easily as those were done at the Crystal Palace; but it so happens, that there are not more than three or four kinds of Dahlias worth one-half the trouble of training down that way. The two best for training are the very old dwarf purple *Zelinda*, and the very new white one, coming out from Salisbury this very spring—*Floribunda nana*.

2. The reason of your Dahlias running into Aster-sized flowers, on long spindly shoots, is this—you did not cast them off ten years ago. There is only one Dahlia, out of thousands, that will keep up the credit of the breed more than ten years. Acres upon acres of seedling Dahlias have been flowered every year for the last twenty years, and fanciers renew their stock every year, by casting off so many of the older kinds.

3. Dahlias are made from cuttings of the young shoots, forced for that purpose, as freely as Verbenas, but not so easily; and cuttings with a piece of the old root attached are not cuttings at all, but plants upon their own roots, and they need not a greenhouse or any glass. They will do to plant at once in the open ground, just like sprouted Potatoes: that is one of the easiest, and the very best way for private use. Put out the old Dahlia roots about the middle of April, in a warm sheltered corner, as if you were planting them "for good;" and when they are sprouted take them up, towards the end of May, and divide them so as that each shoot will have a piece of the old root. Plant these pieces for the full bloom.]

SEASONING HIVES—PRODUCE AND VALUE OF HONEY.

"1. Can you inform me what time is required to season a hive, so that a swarm may safely be introduced? 1st, a newly-made hive of new wood; 2nd, of old wood; and 3rd, of straw.

"2. What is the average produce of an improved cottage hive in a moderate district, and the same with Nutt's Collateral?

"3. What is the best price that can be obtained for large quantities, say 50lbs. to 100lbs., of bellglass honey? Some here get 2s. for small quantities."—BEELOVER.

[After having a swarm of bees, it is always well to keep watch upon them for some hours, for it is not always possible to account for their likes and dislikes, and they will occasionally leave the hive after being apparently settled in it, and, sometimes, without apparent cause. It is quite possible that a newly-made hive may be distasteful to the family, from smell contracted from dirty straw, or where the ends of the straw have been burnt, or even left too rough. Or a queen might, now and then, be fidgetty and restless. All hives are better, seasoned a little while before use; and, in particular, the smell of unseasoned wood and paint is disliked, so that in such cases exposure to the air before use is desirable, for some days, or longer; besides that, an entirely new box-hive is liable to warping and cracking, unless extremely well protected from the sun at all times. As to the expected produce of honey in any kind of hive, there can be no reliable estimate given. Season, district, weather, and numbers in the hive, all influence the harvest, which may range from ten pounds to fifty pounds. The market price, also, of honey, is liable to various contingencies of quality, locality, and season. It is not unusual for the best honey of the season, in glasses, to be worth 2s. a pound in London.

We cannot decide upon your proffered narration of mishaps until we have read it.]

RETARDING VINES IN A CELLAR—VINES IN POTS.

"I have some potted Vines, strong canes, in large pots, in a cellar. If I keep them there through the summer will they still remain at rest? and, if so, can I then force them very early next season? I should like to pot them in the Pine

stove, in September, and be able to cut ripe fruit by the end of next March. The sorts are *Black Hamburgs* and *White Sweetwater*.

"2. Is there any difference between the *Lombardy* Vine and *West St. Peter's*? and, if so, what is the difference?

"3. I have some small Vines, one year old, from the eye, in No. 24-pots, in which they were grown last year, plunged in bottom heat. I was just thinking of shifting them into larger pots, and cutting them back, and putting them again in bottom heat; but, in taking them out to do so, I find the roots all appear dead and rotten. They have been under shelter all winter, and the balls of loam are now very dry and hard. Will they grow again and make plants, or not? Had I better shake them out, or not? And will sandy loam or clayey loam suit them best? Will bones and charcoal, mixed in the loam, assist them? What amount of bottom heat will suit them best?"—A PERSEVERING AMATEUR.

[We have not tried your proposed mode, but we fear you will not succeed; but it is worth trying. We should have more hope if the Vines were grown early; ripened as to their wood early; got out in the open air by the end of July against a wall; and then placed in an *ice-house* in August and part of September.

2. The *Black Lombardy* Grape has a long, broad-shouldered bunch, with large rounded-berries, juicy and rich. The *West St. Peter's* has medium-sized, longish bunches, largish berries, and is firmer and more sugary than the *Lombardy*.

3. The roots you have sent seem to be thoroughly dried up. Your safest plan is to water them with water at about 90°, where they are; first making some holes through the ball, in order that the dry earth may absorb it gradually, and, therefore, do not give too much at a time. This, if anything, will restore them, and syringing the tops well; and we would give them no more heat anywhere than 50° until the buds broke freely, and the roots have also been brought into action. If not dead, they must be pretty near it. If they should survive, then shift them into 12-inch pots, and give them stiffish fibry loam, and plunge them into a bottom heat of 75° to 80°; and when they begin to feel themselves, you may first stop the points of the shoots, and gradually remove them all, except the one you mean to grow for the next season; and when that is growing freely, you may cut away the old shoot above it. You will observe, we give exceptional advice for an exceptional case; as much of the recovery of the plants, as respects their roots, we think, will depend not on cutting down at first, but encouraging the top growth of the old shoot.]

VENTILATING A GREENHOUSE IN WINTER AND SPRING.

"A Constant Subscriber would be very much obliged for a more clear direction as to ventilating a greenhouse, of which she takes the whole care. She peruses every number of *THE COTTAGE GARDENER*; but the subject of ventilation and heating a greenhouse, particularly in spring, she does not understand. The paragraph of 'old rule of one to six,' &c., page 334, March 2nd, she does not at all comprehend. Of course, to a practical gardener, all these things are so easy, that they, who do not understand them, may appear very stupid. Last week fires were discontinued; but the last two days, not nights, a fire has been put on just to warm the pipes, fearing damp; the house is heated by hot water. The Geraniums and Verbenas are coming into bloom, and not a green fly in the house. The 'Greenhouse for the Many' she has found of the greatest use; but that does not explain quite sufficiently the upper and lower ventilation. On the top of her hotbed she has laid bark, instead of ashes, as the ashes caused a fungus on the pots like snow. Should the bark be watered to get up the heat for seeds?"

[Your success in having everything flourishing, no green fly, Geraniums and Verbenas in bloom, is just a sufficient reason to us, that we can do little to help you, in the way of ventilating. We are not surprised, however, that you did not see through the rule of "one to six" idea on ventilating, at page 334. It fairly made us scratch the inquisitive bump, and we could only come to the conclusion, either that our old friend, Mr. Beaton, meant to give us as great a starter, as

some theologians do, when they come out with some out-of-the-way mode of expressing a generally-received truth; or that there had been another of these mortifying misprints, that make havoc of the intended sense, more especially as the implied rule of *one to six*, signifies giving only one inch of top air to every six inches of bottom air. Be it understood, however, that the writer is referring to the Crystal Palace, and to the forcing-house there, so managed that the bottom air must pass over the heating medium before getting among the plants, and it is not likely that your greenhouse is so constructed; and if it were, we do not think the rule referred to, would be the best in your case.

We were among the very first to save fuel, and keep the plants healthy, by a great disproportion between night and day temperature; but as we could not heat the air before it was admitted at the bottom of the sash, we used to give a little air early, at the top or ridge of the house, just as you will find described in the preceding paragraph, page 333, which convinces us that the rule "*one to six*" has reference to particular circumstances.

In a forcing-house we frequently give a little top air at the ridge, without any bottom air at all; and in the case of a greenhouse, we would do the same in severe weather, and if we gave front or bottom air; and had no means of heating and moistening the air before it entered among the plants, we would just reverse the rule, and give six times more at top; or, at least, three or four times more at the top than bottom or front. The reasons are these. As heat ascends, the warmest part of the enclosed atmosphere, other things being equal, will be found at the ridge or the highest part of the house. Vapour when heated also ascends, so that the air at the highest point is not only the warmest, but most loaded with invisible moisture or vapour. When you open a ventilator there, it is true you let out the most heated and the most moistened air, along with some collected impurities; but it is also true, that when a small opening is made there, the dried, cold air, owing to its density, rushing in and down, is both warmed and moistened before it reaches the plants, by passing through the warmer and moister air that is escaping. The same thing does not take place to an equal degree, when you open a front sash, unless you can heat and moisten the air as it enters; for as the air there, without such means, is neither so hot nor so moist as that at the top of the house, so neither would the air admitted there be so soon heated and moistened, and when admitted in large quantities on a sunny day in winter, with a dry, biting frost in the shade, tender plants have often suffered greatly.

You will see something to suit you by analogy in a late article on the shrivelling-up of Peach blossoms, and also on air-giving in various parts of this work. Now, as to what we would do in such a case as yours, supposing that you have a lean-to greenhouse, no particular mode of heating the air before it is admitted, and the average night temperature from 40° to 45°. In mild weather, we would give air top and bottom every day, and most and earliest at the top. In very severe weather, we would give little air at all, and that little would be at the top of the house. In a cold sunny frosty day, and the sun likely to keep out, we would let the fire get low, if not out; we would give an inch or so of air, when the sun raised the house to from 55° to 60°, and if it did not raise it more, we would give no more air; but if it got much higher, we would give another inch, and still no bottom air at all, for reasons already given. If the wind was piercing and dry, we would contrive to shade the house temporarily, before letting it in freely among the plants. If we merely wished to keep plants alive, such as old scarlet Geraniums, we would not be so particular in not giving air, and neither should we shut up the house so soon. But, in a growing-house, such as we have supposed the greenhouse to be, we should shut up early in the afternoon, and very likely sprinkle the paths and floors, that the plants might have a moist air as well as a warm one. Whenever the sun raises the thermometer to from 35° to 40° in the shade, you may give air more freely; but in all severe weather, and in common circumstances, give little air, and that chiefly at the highest part of the roof.

You may have wanted a little night fire since you wrote. Your lighting fires during the day would depend, as to its usefulness, entirely on the weather. If mild and sunny, there would be no occasion for them. If raw and dull, though not

so very cold, say from 35° to 40° out of doors, then the lighting of them would do great good, by promoting the circulation of the enclosed air, and enabling you to get rid of any impurities, by just removing the top ventilators a little. In all foggy, dull weather, a little fire is thus very useful. It will soon change visible into invisible vapour. In fact, could you give attention and were secure from all danger from frost, we would heartily advise you to raise the temperature of your house rather in a dull day, than during a dark night, as though the former may be dull, it is yet day. In frosty weather, on the other hand, and even in forcing-houses, as well as in greenhouses, it is no uncommon thing to find the houses warmer at night than during the day. You will see in the article to which you refer, that the cultivators at the Crystal Palace do not get alarmed at 40°, or even 50° difference; and all my practice goes to prove that they are perfectly right. In a greenhouse, you may have safely fully half that difference.

The bark for the hotbed had better be watered, if dry.—R. FISH.]

INSTINCT OF BEES.

WE think it is very uncertain, if bees know the exact time when a swarm will leave the stock; indeed, the well-known fact, that bees laden with pollen often mingle with a swarm, instead of depositing their burdens in the hive, tends to show that they were taken by surprise; for if the bees had not happened to come home at the time of the swarm's exit, they would have stored the pollen in the stock, instead of losing it amongst the swarming bees; these, like a healthy stock, consist of bees of all ages, but it is impossible to discover how they are governed, or by what rule they leave the hive.

It is certain, however, that when once a swarm has left the stock in the proper way, the bees lose all regard for it; indeed, their instinct seems to forbid them to return to their old home, however well stored it may be, even though they be starving in a new one. Nay, the law of expulsion acts so strongly upon them, that stragglers left behind, when a fresh swarm is removed, often linger for days near the spot where the bees clustered. We have observed this when they were hardly a gunshot, or even less, from both their old home and the new colony to which they belonged. This may seem strange, but it accords in part with the *rationale* of swarming, as also with somewhat deficient instinct of the insects in finding out their hive when only removed to a short distance. This shows the necessity of allowing fresh swarms time to settle, before they are removed; and these few hints, on the instinct of bees, may be of use to some who wish to try the plan of "putting swarms in the stocks places," with the view of getting more bees from the latter. Having so lately spoken on this subject, it would be superfluous to say more, concerning the utility of it, at present.—J. WIGHTON.

CULTURE OF PHLOX DRUMMONDI.

I HAVE not seen in THE COTTAGE GARDENER a description of the mode in which I treat the above in my garden. If, however, there be no novelty in what I state, my vanity will not be hurt, if you commit this to the flames.

For several years I have converted it into a perennial, by taking cuttings in the autumn, and housing them during the winter in the greenhouse, and from time to time, while in a growing state, using the finger and thumb pretty freely, to keep them bushy until the latter end of April, or beginning of May, when I plant them out in the borders, where they almost immediately begin to flower, and continue to display their beauty until the beginning or end of December, when the severe frost gives them their quietus.

I have them about the size of two-year old Gooseberry trees.

Last year, owing to the very dry season, they beat the Verbenas hollow.—J. R. W., Bolton-le-Moors.

A VENERABLE CHERRY TREE.—A few days since, a Cherry tree was cut down in the grounds of Mr. T. Bunyard, Loose Road, Maidstone, having attained the great age of 145 years. It was 72 feet long, 8½ feet through the trunk, and the timber, altogether, measured upwards of 100 feet.

MEMORANDA RESPECTING THE SAA-GAA-BAN, OR APIOS TUBEROSA, A SUPPOSED EQUIVALENT FOR THE POTATO. By the Vice-Secretary.

PUBLIC attention having been drawn to this plant by persons who anticipate the possibility of its becoming a substitute for the Potato, it is supposed that a few memoranda respecting its history and qualities may be found useful.

This plant, called *Glycine Apios*, by Linnæus; *Apios tuberosa*, by modern botanists; and *Saa-gaa-ban*, by some of the North American Indians, is a small trailing, tuberous perennial, with pinnated leaves, narrow lanceolate leaflets, and small brownish purple flowers, rather sweet-scented, and growing in axillary racemes, which are shorter than the leaves.

It is described by North American botanists, as growing in damp, rich soils, along the margins of swamps in Carolina (Elliott, "Fl. Carol," ii. 232), and in moist shady places from Canada to Florida, west to Missouri (Torrey and Gray, "Flora of North America," i. 282); but Pursh asserts that it

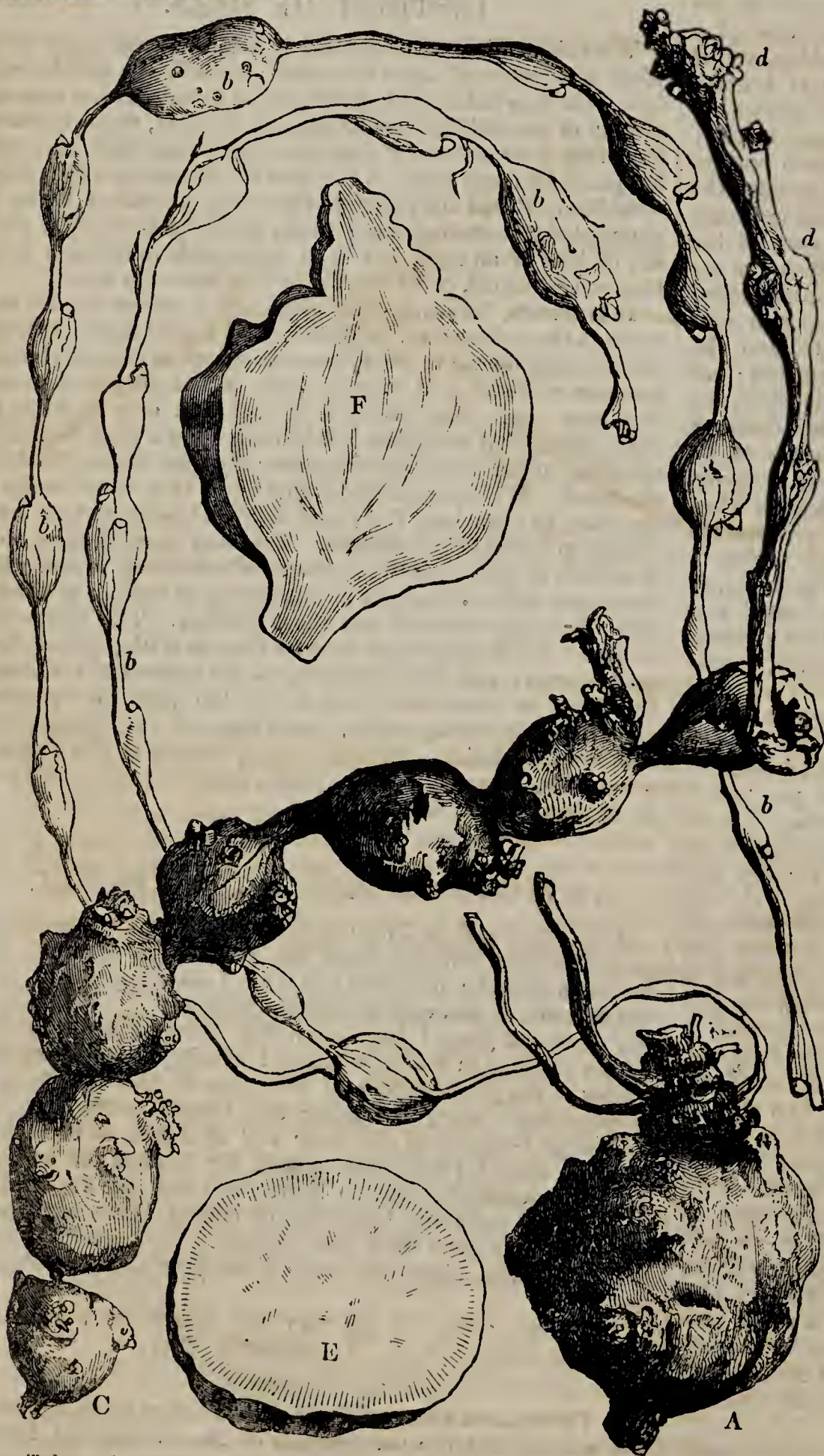
inhabits hedges and mountain meadows from Pennsylvania to Carolina ("Fl. Amer. Sept." ii. 473). Its roots, that is to say, its tubers, are described by Elliot as *small*, and as having formed an article of food to the aborigines; Nuttall calls them "oblong cylindrical tubers, edible and farinaceous, much like those of *Lathyrus tuberosus*, sold in some of the German markets, and rarely larger, though very numerous" ("Genera of North American Plants," ii. 113); Pursh is the only author that I can find who speaks of them differently; he says, that the roots "sometimes grow to an enormous size."

The plant itself is no stranger to our gardens. It is figured in the "Botanical Magazine, t. 1198, and in other works. A rude woodcut, indeed, is to be found as early as 1640 in Parkinson's "Theatrum," fol. 1062, at which time the plant was cultivated in England under the name of "*Terræ glandes*

Americanae sive Virginianæ — Virginia Earthnuts." The latter appellation seems to indicate in what estimation the plant was then held; it was regarded as a mere curiosity, with a "tuberous brown root, which multiplies itself into sundry others."

As it is the tubers which some suppose likely to take the place of the Potato, the annexed cut has been prepared to show what they are, and how they are formed. A full-grown old tuber (A) is as large as a *Golden Pippin* Apple, or a *Nonpareil*; it has a firm, rather hard, fleshy texture, is roundish in form, and bears irregularly a number of tubercles on its surface. These tubercles are eyes or buds; some of them remain dormant; others, especially those near the upper end of the tuber, push into slender underground runners, which, after advancing a short distance, swell, then contract and lengthen again, then swell, and so proceed during the season of growth, until a string not very unlike a rude necklace is formed, as at *b, b*. Towards the end of the season these swellings diminish, or even disappear, and then a slender, cord-like, underground woody stem is all that is formed. The swellings, *b, b*, are young oval tubers, each furnished with an eye or two at the upper end. In a second season these strings of tubers enlarge considerably, form more eyes at their sides, become rounder, and assume such an appearance as is seen at *c, d*; the upper part, *d*, acquiring a more woody texture, and throwing up stems and leaves, or emitting other underground shoots. At what rate this swelling process advances, or how many years the largest tubers which have come under examination may have been in acquiring their size, I do not know; certainly two years, at *c*, or more, and probably several in such cases as *A*.

When examined microscopically, the tubers are found to consist principally of a mass of large oval, very thick-sided cells, filled with starch, among which are scattered irregularly in the centre several woody bundles, composed of strangulated porous vessels of considerable size, very irregular and unequal laticiferous vessels, also much strangulated, and a few spiral vessels. Near the circumference, just within the bark, these bundles are arranged in distant narrow plates, forming short rays, and offering indistinct traces of concentric zones (E). A considerable quantity of truncated prismatic raphides is found among the cellular tissue; and around the central bundles of



Tubers of *Apios tuberosa*. A. An old tuber with a double string of young ones, *b b*. c. A string of tubers two years old. *d, d*. The upper and woody part of the string from which the stems arise. E. A cross section of an old tuber. F. A longitudinal section of the same.

woody tissue are series of prosenchymatous cells, which seem chiefly to contain gum.

In a raw state, the tubers taste like Earthnuts, or perhaps between an Earthnut and an Acorn. When boiled, they are firm, sweetish, of a dirty yellow colour, and in texture and flavour, may be compared to a mixture of Sweet Chestnuts and Parsnip.

The possibility of cultivating this plant requires no proof. It has been for more than two centuries in Europe; fine specimens were exhibited at a Meeting of this Society, in January last, by Mr. E. A. Hamp, gardener to James Thorne, Esq., of South Lambeth; and those, from which the accompanying drawing was taken, have been growing in the Society's Garden for twenty years.

The points for cultivators to ascertain obviously are—

1. Whether a sufficient weight of the tubers can be obtained to render the plant profitable.
2. Whether that weight can be obtained quickly enough.
3. Whether the quality is such as will render it acceptable as human food.

Upon these points, which can best be determined by experience, I can only offer conjectures, and they are not favourable. The land which the plant requires must be so good that any crop which is taken from it must rank among the best and most profitable. The best, the *Saa-gaa-ban* cannot be considered under any circumstances; the profit is doubtful. I am not at present aware, that tubers of any size can be obtained before the second year; but it is quite possible that skilful cultivation may render this more easy of attainment than is supposed. It seems obvious, however, that if two seasons should prove necessary to procure a crop, it can form no part of profitable agriculture. The quality of it is but inferior at the best; and it may even be questioned whether it is perfectly wholesome, for it is nearly related to the Kidney Beans, whose tubers are poisonous; and its employment by savage people, who eat it as we eat pig-nuts, is not an entirely satisfactory proof of its salubrity.—(*Horticultural Society's Journal*.)

EPIDENDRUM LACERTINUM.

A GUATEMALA plant, presented to the Society in April, 1847, by G. U. Skinner, Esq.

A plant with the habit of *Epidendrum nutans*, but of smaller dimensions. The flowers grow in terminal, somewhat racemose corymbs, are about an inch and three-quarters long, but on account of their sepals and petals being reflexed, they seem twice as long. The latter are pale bright green, linear-lanceolate, and nearly alike in size, form, and texture. The lip is adherent to the yellow column, whence it projects in the form of a dagger-shaped purplish blade, with a pair of triangular lobes at its base; the whole resembling a lizard's tail, the head being buried in the column. As the inflorescence has no spathe, but protrudes its flowers immediately from among the leaves, the species must be placed among the true *Epidendrums*.

It requires the same treatment as other *Epidendrums*, flowers in July and August, and, although not handsome, merits notice on account of the singularity of its flowers.—(*Horticultural Society's Journal*.)



THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.

By P. V. M. F.

(Continued from page 28.)

WHERE TO PLACE HIVES.—Now, I shall suppose that you have got your swarm; the next thing is, whereabout to put it. First, choose a snug place in a warm and sheltered corner of your garden, facing the south, south-east, or south-west. I prefer the south-east. Set your hive on a stout post, let firmly into the ground. Every hive should stand *alone*, on a single stool, at least two or three feet distant from any other hive. Next cover it well over with an earthen pan, or a good hackle of straw, thick and neatly-made. Nothing is so hurtful to bees as to leave them exposed to the heat of the sun, or to rains and melting snow. The *bees* suffer from both heat and damp, and the *hives* soon rot and fall to pieces. And I will add, nothing is so disgraceful, or speaks worse for a bee-keeper, than to have in his garden a number of untidy, miserable-looking hives. They are common enough, I am sorry to say. A bit of old rag, a tattered coat, a broken milk-pan, or anything that comes first to hand, is thought good enough for the poor bees; and, to make matters worse, they are often put into old and worn-out hives, which are not seldom full of vermin. I at once suspect the tidiness of the cottage, or the kindness of its inmates, where the hives are in this condition. No cabbages, lettuces, grass, or tall plants of any kind, should be suffered to grow just in front of the hives. The bees often come home heavy laden and tired, and fall down before they get into the hive; in which case, if any of these plants surround the hive, the weary bees get out of the sun, and become chilled and die; especially in cool or

rainy weather. It is well to place the hives within a little distance of a small pond, or shallow stream; but if there is no water near, you ought to sink some large dish or milk-pan in the ground close by, in a warm nook if possible, where the sun always shines in the afternoon. Fill it with stones, or pieces of wood, for the bees to light upon, without risk of drowning, when they come to drink. They cannot do without water in spring or summer; and if they find none near, they will go long distances in search of it, especially in dry weather.

SECTION 2.—SPRING MANAGEMENT OF BEES.

SIGNS OF PROSPERITY IN SPRING.—Now we will suppose that your swarm has managed to live well through its first winter. The spring is coming: perhaps it is now nearly the end of February. Go then on a fine morning and examine your hive. If at about eleven or twelve o'clock you see the bees at work, flying in and out with little balls of green, yellow, or red stuff on their thighs, it is a good sign. This stuff, of which they carry a great quantity into the hives every spring and summer, and, indeed, in autumn too, is called *pollen*. It is a sort of dust, of which you will see a great quantity in the middle of most flowers, when full-blown. Many persons call it wax; this, however, is a mistake. The bees never carry wax in this manner into their hives. They collect this *pollen*, solely for the purpose of feeding the young bees in the cells. When, therefore, you see much of this pollen carried into your hives, you may be quite *sure* that your bees are doing well, and the more they carry the better. It is a sign that the queen is laying eggs fast, and that the hive is filling with young bees.

HOW TO CLEAN HIVES.—Do not be satisfied with this,

however, but take off the haekle, or milk-pan, and clean them well. Often you will find insects and other vermin about the hives, which may get in and annoy the bees. Also lift up the hive and peep into it. If you see any *mouldy* or very *black and dirty combs*, you had better put a veil and gloves on, and cut them out gently and carefully with a *sharp* knife. The bees will soon repair the damage, by making new and beautiful combs in place of the old. Also scrape the stand well, and make the hive all right and snug as before.

HOW TO HANDLE BEES.—I should tell you that in handling bee-hives you must go *quietly* to work: touch them very gently, so as not to knock or jar them; and, above all, never *breathe* upon your bees. A knock will rouse them in a minute, but the breath of man or woman makes them vicious.

SIGNS OF WEAKNESS IN A HIVE, AND THE CAUSE THEREOF.—Keep on watching your bees through March and April: never let a day pass without looking after them, if you want them to do well. If they go on taking large quantities of pollen into their hive, all is well; but it will sometimes happen that they cease doing so by degrees,—less and less every day. *This is the worst possible sign of all.* As soon as you discover any idleness in your bees like this, and they cease carrying pollen into their hive *in spring*, you had better take up your hive at once, and get what honey you can out of it. The bees which remain in the hive (and there are often a good many of them) will do nothing but amuse themselves with flying in and out on fine days, and eating up the honey while it lasts, or till they die. The honey you see had better be stored up in your cupboard, than wasted upon idle bees. But you will like to know the *cause* of this. I will tell you in a very few words. *Either the queen-mother is dead, or she is getting old and worn out.*

(To be continued.)

BOYD'S PATENT IMPROVED LAWN MOWER.—Those who use mowing machines must be aware of the fact, that the revolving knives clog, and often run over the grass as though they were sweeping it, rather than cutting or breaking it off. Mr. Boyd's invention, we are informed, obviates this. Bristles are brought to bear upon the revolving cutters every revolution they make, so as to keep them always clean and fit for work.

TO CORRESPONDENTS.

CUTTINGS IN SAND AND WATER (*A Lady Gardener*).—You must try again and again till you learn the exact cause of the failure. There is no question as to Verbenas striking better and easier this way. Some of our best flower gardeners have so grown them for years. To say that Verbenas, so rooted, are more liable to mishaps afterwards, is only the story of the old sailor over again. He would never sleep in or on a bed, because his father and grandfather died in their beds.

GARDENER'S SITUATION (*A Regular Reader*).—At the age of eighteen, and knowing little of gardening, unless you have a powerful patronage, you will not get the means of learning more of gardening than will raise you to the rank of a good garden labourer. They would not take you as a boy in a large place, and your labour would not be worth there more than that of a day labourer, of whom thousands can earn hardly enough to keep them from starvation. Mr. Beaton tells us, that to his personal knowledge, there are very few good head gardeners who do, or can, take on strangers for the sake of a premium; and most of those who do so, pocket the premium, and take no heed or interest whatever in the practical education of the stranger. He says, also, that a man, or lad, or boy, who pays a premium to a gardener, is worse off than a common labourer, in nine cases out of ten.

CARSON'S NEGATIVE PAPER (*A Subscriber*).—You have fallen into an error, common to amateur photographers. Leave the salted paper longer on the nitrate of silver, and use more of the solution. Photographic paper can be purchased salted, already for use; that which has been prepared with albumen should be used for the best *positives*. See, also, answer to "L. M. N.," COTTAGE GARDENER, March 16th, 1858.—E. A. COPLAND.

GARDEN PLAN (*J. F.*).—We never lay out gardens.

"SPRUE GRASS" (*T. M. L.*).—The very small heads of Asparagus are so called. Never let your brother gardeners know that you asked us how to cultivate "Sprue Grass," or you will never hear the last of it.

SCORCHED CALCEOLARIAS, &c. (*J. C.*).—The tobacco smoke was either too hot or too abundant. Either excess is liable to scorch, or wither, plants confined in it.

INODOROUS FELT.—*A Subscriber* wishes to know where this, recommended by the Entomological Society, for mounting insects, can be obtained.

VARIOUS (*A Searcher of Knowledge*).—A *rod* is the same as a pole or perch, 30½ square yards. The charge for digging varies with locality and soil. A man will dig a rod an hour, of fair garden soil. We

cannot recommend fruit trees without knowing anything about the family requirements and locality. You will find the London measures in the "Gardeners' Almanack," and "Cottage Gardeners' Dictionary." You will find the "The Planter's Puzzle" answered in our 30th number.

PEARL BARLEY, &c. (*Rose Caroline*).—There is no machine adapted for families for forming this out of common barley, and if there were such a machine, it would be expensive. Barleymeal very finely dressed answers well for thickening broths. Sugar cannot be extracted economically from Beet-root, on a small scale. Even large manufactories cannot compete with imported West Indian sugars in price. Excellent beer can be brewed with Beet, substituted for malt. We know of no substitute for tea. Chicory root is the best substitute for coffee. Apply to Messrs. Deane, Dray, & Co. about the mill. Thanks for the recipe.

DRAINING A LEVEL TRACT OF GROUND (*B. and W.*).—There are various treatises on draining, but so much depends on local circumstances, that we cannot well recommend you to abide by their instructions entirely. You will, however, see in our paper of next week, an article bearing on the subject, which will likely meet your case, and we shall be glad to hear from you again, reporting how you have succeeded. It is a good plan, on going into a strange neighbourhood, to consult one or more of the best and most spirited farmers on such subjects, for local circumstances govern actions, and having satisfied yourself that the opinion given is free from prejudice, you may, in most cases, act upon it.

BLACK PRINCE PINE-APPLE (*J. W.*).—You are wrong, the *Black Prince* Pine-apple was exhibited three or four years back, also the *Charlotte Rothschild* about the same time, and both were then described in THE COTTAGE GARDENER. See our Nos. 334 and 338.

NAMES OF PLANTS (*Grace*).—Your "Uva ursi," probably, is *Arctostaphylos uva-ursi*: (*An Old Subscriber*).—1, is *Aster argophyllus*, or Musk-scented Starwort. 2. *Tarichomanthus camphoratus*, or Shrubby African Fleabane. (*F. W. S.*).—There must be some mistake. The flowers surely were not produced on the same plant. The dark flower is *Kennedyia nigricans* certainly. The other orange and red flower is the *Zichya longiracemosa* or *longipedunculata* of Henderson's list of plants.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MAY 26th, 27th, and 28th. BIRMINGHAM. Secs., Messrs. Titterton and Cattell, 26, Worcester Street.

JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, Hammet Street, Taunton.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. Sec., Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. Sec., Mr. James Beesley.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.

AUGUST 30th and 31st, and SEPTEMBER 1st. NORTH HANTS. Sec., Mr. T. Moore, Fareham, Hants.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

POULTRY HOUSES — CONSEQUENCES OF BRICK FLOORS — EGGS FROM PRIZE BIRDS.

WHEN a crowned head in any country visits the theatre, the performance is "by special command;" and many of our correspondents appear good naturedly to assume the "regal majesty," and order in consequence. This week, then, THE POULTRY CHRONICLE's servants will have the honour to represent "The Crowded House; or, What shall I do with my Chickens;" followed by "Damp Lodgings, or the Miseries of a Brick Floor." The whole to conclude with the Faree of "Eggs without Chickens. Vivat Regina, and no money returned."

"Sir," said an old pauper of our acquaintance, "the work'us is very well in the spring and summer, but it is awful in the winter. Three in a bed, and the beds is small, and the 'casuals,' and them as comes in only for the winter, great, strong people; and it does go hard with we poor reg'lar inmates, I promise you."

"We wonder," said we, "there is not more accommodation."

"There aint room, sir; the work'us isn't big enough."

"Well, but," said we, "why was it not built larger at the time?"

"'Cause they never dreamed the parish would get so large."

Now the workhouse erected to lodge with such comfort, as may be, 200, is far too small for three times the number. In the summer, when inmates are scarce, the master says it is a great rambling place; in the winter, when it is crowded, he swears

there is not room to swing a cat in it. Just what "a successful exhibitor in 1857" says of his poultry shed. Acting on our suggestion, he built a shed for them in his yard. It was a perfect model; about twelve feet in depth, lofty in the front, thatched down to the ground behind, an artificial bank at the back, the ground covered with loose dust and sand; a very Elysium for young chickens in cold or wet weather. We saw four ribs in it last year, at regular distances one from the other, each containing a hen, and each hen with a brood of chickens. Our friend went to Liverpool; he saw the Single Game Cock class, and those marvellous Silver Cups, and he took to Game. A short time since he complained of his bad luck—he had no chickens. Now he has so many, and the Game mothers are so spiteful to a stray Silver Hamburgh, if it only looks through the bars of the coop, that he knows not what to do with his chickens—he has not room. Put the oldest out, choose a dry spot, and cover the rip at night and during the cold winds; do not let the hen have her liberty, and feed generously.

"Mr. Bumble, sir," said the aforementioned pauper to the great parochial dignity, "the brick and stone floors and passages punishes we old people frightful. I declare, my feet when I goes to bed are like blocks of ice, and they gives me cramps and rheumatiz and every thing as is bad; and I am sure my heart bleeds for the poor children, their toes is covered with chilblains. They sets and cries, for they aint courage to walk and run and warm theselves, and it's quite bad to see 'em all huddling up for warmth."

"True," said that great man; "I knows it, and has mentioned it, but it's no use; they sends the children to the Infirmary, they find fault with us and the inferior officers, but they don't remove the cause."

Tyro says, all his chickens pine and die; he has noticed their toes and knees swell. They get together in a heap, and stand first on one foot, then on the other. He cannot find out the cause. They are with the hen in a washhouse with a brick floor, but he has the precaution to put an old piece of carpet on the spot where the coop stands, and he keeps a fire constantly in the place.

"Move them out, sir; give them fresh earth and fresh air. Your old piece of carpet, on a damp brick floor, becomes even colder and damper than the bricks themselves; and your chickens die—or rather perish—of cold and cramp."

Poor old Jack Falstaff! We are always disposed to thank Dr. Doran, for putting his character in a favourable light, but we hardly know what he has to do with poultry. We believe he liked a good fat capon, washed down with sack, and Shakespeare's Justice was with "good capon lined;" and this paper was histrionic in its beginning, and we promised the farce of "Eggs and no Chickens."

Look at the bill; eight eggs bought, and only three chickens. Monstrous! all this sack to one pennyworth of bread. But those that do hate are good for nothing; nay, not good for nothing. Well, then, they are not prize birds. Hear! Hear! Only fancy the bay colt by the brown horse that won the silver-rimmed spectacles in a shagreen case, at the Little Podington Races, and whose dam won the sweepstakes of two shillings each at Eatonseville, only ran third for the new silk umbrella at Podger's Lane.

"Something wrong, sirs; who will back any horse again?" G. R., in a great passion, said to the clerk of the course and the umpire, "Who can I trust?" The answer was in the most polite tone, "That seeing all the horses were descended from winners on both sides; next, that though twelve ran, there was but one prize, and could be but one winner." Bad as buying eggs from prize birds.

But people are sometimes unaccommodating. A friend of ours, who sells eggs, showed us an application from an amateur for some eggs, to be sent a long distance into the country, and "as the season was late he wished them to be within *four days of hatching*." Our friend refused. Too bad.

We have already stated we have bought eggs, and have never been disappointed; but we know it is an impossibility for all chickens to be of equal merit. A good-tempered old friend of ours (he is an old bachelor) has a curious habit, when about to emit what he pleases to call a "clinch," to button one button of his blue coat; to look first down, then up; then to close one eye, and to poke a stout fore-finger into the ribs of his victim. We had occasion to tell what we have just stated to our friend. He went through his pantomime (our ribs

remember it), and triumphantly said, "Tell that to the marines, or find me the inferior birds among Goldfinches and Kingfishers." We are half disposed to believe his idea, that he had thus settled the question, has made him a correspondent to THE COTTAGE GARDENER on this subject. Eggs without chickens may be a farce, but it is no joke to give a large price for them, and to have no produce; and it is, or ought to be, an admitted fact, that it is impossible any fault can be with the purchaser. It must rest with the seller. Perhaps the hen did not sit close? Nothing of the sort; she only left her nest once for a day, and that was before she had been a week on the eggs. Perhaps the eggs got chilled? It was not likely, as there had been no frost for the last fortnight. Perhaps,—stop, stop; eggs bought at a large price ought not to be subject to all these contingencies.

If the hen was too long off her nest—the eggs were bad. If a hard morning frost chilled them—the eggs were bad. If they were too dry, and the chickens perished in the shell—the eggs were bad. If they all hatched and produced good birds—so they ought, at the price paid for them!

This part of our mission being ended, we beg to recommend the eggs advertised in our columns to the notice of those who may stand in need. Had the purchase of them proved futile, the practice would long since have been discontinued. The reverse is, however, the fact. There are more sellers and more buyers every year. We confidently add that, as a rule, bought eggs turn out well; and we could, if necessary, give some startling results from them. We know many instances where first and second prizes, at large Shows, have been the result of the outlay of a few shillings.

MR. WORRALL'S DEFENCE.

As long as you will extend to me a right of reply, I sincerely hope that you will publish any statements which may be sent to you reflecting upon my private character, or position as Secretary to the Liverpool Poultry Show.

"BIRCHEN COCK," in No. 497 of THE COTTAGE GARDENER, remarking upon the mention of my Game Bantams, after the Liverpool Show, writes—"I wonder, when Mr. Worrall read this, if it recalled to his memory the very unquestionable manner in which he got possession of the two hens." I suppose I have a right to consider that he has used the word "unquestionable" in an invidious sense, and, therefore, reply, that I bought them from Mr. Martin Turner, of Preston, and paid for them at the time of the purchase; Mr. Turner kindly promising, if possible, to find me a cock to match them. He also asserts of my Golden-pencilled, which won at Liverpool, that "the hens' hackle feathers had been cut or plucked to a shameful extent." In reply to this I can only state that the same pair were exhibited at Burnley and Preston, and that not a single feather has ever either been clipped or drawn. This I am prepared to substantiate, by submitting them to inspection at either the Sheffield or Preston Show, that "BIRCHEN COCK" may choose.

To "FAIR PLAY," I reply, that Gilliver was selected as the most likely of the men who offered assistance to handle the Game cocks safely, which was done under the superintendence of my brother. And I may mention a circumstance which will, I hope, dispel the impression that, in availing myself of Gilliver's valuable services in penning these birds, I asked in "favour" of my co-Secretary. My brothers and brothers-in-law had sixteen Game cocks in this class, none of which were successful; is it likely that I should wish to "favour" Mr. Moss! "FAIR PLAY" must be aware that fowls are frequently entered at Birmingham, and other Shows, in the names of servants, and I assure him that my co-Secretary had no "favour" which would not have been willingly conceded to himself.

I agree with "BIRCHEN COCK" that the Mooney question ought to be "discussed by competent authorities;" and all I ask is, for Mooney hens to be shown exclusively with Mooney cocks, and not with Yorkshire Pheasants, as they have been. Obtain for me this boon, and you shall have no more complaints; but if you will not use your influence to rescue my favourites from the anomalous position they have hitherto occupied, I am determined to continue the discussion.—WILL. C. WORRALL.

MR. WORRALL'S GOLDEN-PENCILLED HAMBURGHES.

SEEING in your paper of April 6th a letter from "BIRCHEN COCK," in which he accuses Mr. Worrall of having plucked the feathers from the hackles of his Golden-pencilled hens, with which he won at Liverpool, I now come forward, not as a partisan of Mr. Worrall, for I never saw him in my life, and have had but little correspondence with him, but I must say, when I see a person openly accused of a dishonest action, and knowing at the same time it lies in my power to contradict the accusation, I feel in duty bound so to do. I happened to be a purchaser of one of the hens, referred to, of Mr. Worrall, and have minutely examined her hackle more than once (as for a pencilled bird she is remarkably clean), and confidently assert there is not the sign of a feather ever having been plucked from her hackle, or elsewhere. I think, if Mr. Worrall has made an unwarrantable attack upon the Preston Committee, there are others who have behaved much worse towards him.

I know nothing against the Preston Committee; and, as I before said, I never saw Mr. Worrall in my life, but the only time I had anything to do with him he treated me as fairly and honourably as one party could treat another.

I must trust to your impartiality for your inserting this, and will conclude with impressing on the minds of those who have interested themselves in the affair, that such contentions in the poultry world are most detrimental to the poultry fancy generally; and if every amateur, who is fortunate enough to win a silver cup, is to be subject to such gross insults and false accusations from the less fortunate competitors, the poultry fancy will soon go to the ground; if not, those who are insulted and falsely accused will give up showing: and I maintain, that the loss of such a man as Mr. Worrall would be a great loss to the poultry community at large. It must be remembered he is Secretary of one of our best Shows, or, at any rate, of the one which gives the best prizes; therefore, I think, we ought rather to feel a debt of gratitude to him for the trouble he has taken in promoting the interest of that Show, than be continually hashing up false accusations against him. I only speak of him as I have found him, viz., a gentlemanly and honourable man.—AN AMATEUR.

EMPLOYMENT OF EXHIBITOR'S SERVANTS.

HAVING seen a letter in your number of April 6th, signed "BIRCHEN COCK," I am desirous of contradicting his statement, in which he says, "May I ask, how it was that the servants employed on that occasion were men belonging to gentlemen, who exhibited to a great extent—and, by referring to the prize-list, it will be seen, figured considerably among the successful exhibitors? I allude to Mr. Douglas and Mr. Gilliver." I beg leave to assure "BIRCHEN COCK" that he is misinformed, as to the former person, as Mr. Douglas was at Birkenhead during the judging of the Liverpool Show, and did not return until the awards had been made. Also, I would acquaint him that it is a thing I should not for a moment allow, that any servant of mine should undertake any employment except in my service; and further, that Mr. Douglas had no orders from me to that effect.—WILLIAM WARREN VERNON, *Wolseley Hall, Rugeley*.

W. GILLIVER AT THE LIVERPOOL SHOW.

I FEEL that I must, in justice to myself and others, flatly contradict "FAIR PLAY'S" assertion, charging Mr. Worrall with an unfair and improper proceeding in selecting Wm. Gilliver, a servant of Mr. Moss's, to pen the 100 Game cocks at the Liverpool Show.

The facts of the case are just these:—The pens not being finished the night preceding the Show, until a late hour, five or six of the Committee were there doing everything, in the most praiseworthy manner, to assist. By their unanimous consent Wm. Gilliver, being near, was asked to assist. It was thus he had "the great advantage." By the way, I should be glad to know what *advantage* he had by so doing;

for any exhibitor knows that each pen is numbered, as is each basket. So that he had not any advantage as to position.

Far from objecting, I think exhibitors should feel thankful so competent a person was selected to handle Game fowls.

As to his having access to his master's fowls on the day they were judged, that is a total fabrication. He was in my company at Birkenhead from nine o'clock in the morning until late in the afternoon; when, of course, the Judges had decided.

I will conclude by warning "FAIR PLAY" how he runs away with a hearsay tale. Let him ascertain the fact of the matter before he "rushes into print," which might be better occupied.—JOHN DOUGLAS, *Wolseley Aviaries*.

P.S. If "FAIR PLAY" would *play fair* he would give his name and address.

THE LIVERPOOL POULTRY COMMITTEE.

IN the various attacks on Mr. W. C. Worrall, in the last few numbers of THE COTTAGE GARDENER, hints have been repeatedly thrown out in some of them that the Committee and Secretaries obtained their prizes at the last Liverpool Poultry Show by unfair means; and allusions have also been made to some mysterious influence, said to have been exercised over the Game Cock class, by one Wm. Gilliver. I will state, in the first place, that, although the Secretaries and two of the Committee obtained prizes, three other members of the Committee, who exhibited amongst them no less than twenty-three pens, had not any awarded to them; and as a proof that their birds were not altogether inferior, two of the latter, who also afterwards exhibited at Preston, had each a prize awarded to them.

In the next place, I will state the plan adopted at Liverpool for penning the birds, which will, I think, dispel some of the illusions which prevail on the subject by parties who have not seen the operation performed. As soon as the hampers were placed opposite the pens, which had the corresponding numbers attached to them, the members of the Committee, and the Secretary present on the occasion, each undertook the correct penning of one side of each avenue, and, for this purpose, took with him four men—one to cut open the hampers, turn over and stitch down the labels, ready for their prompt return after the close of the Show; another to take out the birds, and place them in the pens; a joiner to fasten up each pen immediately; and a fourth man to carry the empty hampers away. And here, let me observe, that it would have been more convenient to have placed a number of the smaller hampers under the pens. The Committee, however, preferred having them removed out of the room, than, by allowing them to remain, give cause for even a suspicion to arise, that, by such means, the Judges might become acquainted with the names of the owners of the birds in the pens above. As I was not engaged in the avenue in which the Game cocks were, I do not know whether Gilliver was employed or not; but as there were altogether upwards of twenty men engaged at the same time, he may, for what I know, have been one amongst the number; and I can only say that I should have been glad of his services; as an inexperienced person, in endeavouring to take out of the hampers birds so wild, as some of them are, might easily relieve them of their tails (as some of my own have been at other Exhibitions), and rendered their chances of success hopeless. I do not recollect seeing a single one of the 100 Game cocks at Liverpool minus his tail; and I think, from the appearance of the birds, no one could bring a charge of unfairness in this respect. One would fancy, from the ravings about this man Gilliver, that his ghost must surely have haunted both the Preston and Wellington Game cock classes, as Mr. Moss appears to have been as successful at these, and other Shows, as at Liverpool.

With respect to the mysterious understanding between the Committee and Judges, which has also been alluded to, I have not the slightest objection to state the part I had in it. After the birds were all penned on the Monday evening, the lights were put out, and the Committee separated. My next appearance in the room was at half-past four, P.M., on Tuesday; the Judges, having given in their awards, had retired shortly before that time, and I first saw them after the Exhibition was opened to the public on the Wednesday morning. The Secretary, as a matter of course, had to be in attendance

on the Judges entering the room, to hand them their books, and afterwards to receive their awards.

With respect to the question, which has been mooted, as to whether Secretaries and Committeemen should exhibit or not, I must say, with all due respect to "FAIR PLAY," that I differ from him. I will ask, in the first place, how are Poultry Shows generally got up? A few enthusiastic amateurs, who have become successful exhibitors at other places, meet together, and resolve to have an Exhibition in their own district; they collect subscriptions, issue their prize-list on what they consider a safe basis, and *should, in all cases, guarantee the payment of the prize-money.* They undergo some anxiety, and work hard to carry it through successfully. And for what! "Oh," "FAIR PLAY" will say, "that exhibitors from other places may carry off all the prizes." What! is an exhibitor to be excluded from gaining honours in his own locality? "Oh, then," "FAIR PLAY" may say, "get a Committee together who do not exhibit." Yes, get them together if you can; but where are they to come from? The thing is absurd. No Committee will undertake the risk, and work, who are not enthusiasts on the subject. You may, on a large Committee, perhaps, get a few ornamental dummies; but they are worse than useless for carrying on a Poultry Exhibition successfully. As to "FAIR PLAY" telling us about "the feeling which dictated the conduct of at least one member of the Preston Committee," it is all bosh. Why, one of the Secretaries and the Treasurer exhibited upward of thirty pens between them, and, as far as my recollection serves me, not *one* of the other officials, who did not exhibit, have obtained any *very distinguished* position at our principal Exhibitions. Do I blame the gentlemen who exhibited so many pens? By no means. I am rejoiced to find the poultry feeling so enthusiastically manifested in them; for, without such energetic amateurs, the Preston Show would, like most others in the kingdom, if reduced to a non-exhibiting staff, be extinguished, like the one in connection with the Royal Agricultural Society of England after the present year.—A MEMBER OF THE LIVERPOOL POULTRY SHOW COMMITTEE.

[The majority of our readers will agree with us in thinking that this controversy may now well cease. It has been vagrant enough; beginning with Mr. Worrall attacking the decisions of the Judges of the Preston Show, branching into attacks upon his own conduct, then again into attacks upon Mr. Chune, and then away into censures upon the Liverpool Poultry Show Committee. We need not say that all this is a subject for regret, savouring of bitter feelings, and making honourable poultry exhibitors ponder in their minds as to who is trustworthy? and, where is there a fair field? This should not be. Men, like Mr. Worrall, when defeated, should submit to defeat; or, if they think they have good grounds for complaint, should make known those grounds to the Committee of the Exhibition where they arose. So, also, when an exhibitor is charged with unfair conduct—a charge which should never be made without evidence certain, and above suspicion—he would do right to remember that it is no defence to retort a counter charge against his assailant. The only inference to be drawn from such a course is, that the said exhibitor considers it justifiable to be roguish among rogues, and that one rogue ought not to brand his brother in crime.]

Such controversies, however, are not without their use;—they warn, that there are lynx-eyed censors about sedulous to detect, and gloating over the detection, of errors. But, better than this, such controversies call forth manly, straightforward letters, like that of "A MEMBER OF THE LIVERPOOL POULTRY SHOW COMMITTEE;" specimens of good sense, and honest feeling, which are assuring and consolatory, after the narrow-minded, selfish, uncandid, and bitter utterances characterising some of the letters of the controversy.—ED.]

BUYING EGGS AND FOWLS.

I HAVE read in THE COTTAGE GARDENER the attack by "R. G." on those who sell poultry and eggs, and the reply to him by "SENEX," with whose remarks I very much agree. I would fain hope that "R. G.'s" strictures are not intended to traduce a few people, "*whose integrity and characters are as unblemished as his own,*" but that they were written in

ignorance, and, perhaps, in a moment of annoyance at some poultry disappointment.

As one of the most successful of the prize-takers, as an old and constant exhibitor, and as possessing, probably, a larger collection of poultry than any one other amateur, I should like to try to convince "R. G.," by my own experience, how groundless is the charge he makes; and how vain is the expectation he seems to indulge, that when he buys eggs, every egg is to produce a bird, and that each bird will prove a prize bird. If so, prizes would easily be won, which is not the case in the present day. I have, at this moment, nineteen walks for Dorkings alone, each walk containing a cock, and from three to five hens. These have been selected to run together, with great care, to secure the most successful crosses. Up to April 1st, I had 172 Dorking chickens, hatched since January 1st, and, with good luck, by May 1st, they will exceed 400. With every care and every attention to feeding, how many "*prize*" birds may I "*hope*" to rear? How many must I expect to be utter failures! If I get fifty prize birds, and 150 tolerably fair birds, I shall have had great, very great, and unusual success. And yet "R. G." expects to get prize birds, from buying, perhaps, one sitting of eggs! With all my observation, I cannot explain the discrepancies which constantly appear in hatching results, though I *do* think there are two causes, which tend to eggs proving useless. One is on the part of the seller, from having his birds, especially the cock, too fat. After a Show, I always observe, the eggs from the Show birds hatch badly, and I think this is owing to the cock, who is fat and lazy. The fault on the part of the buyer, appears to be, that he "*will*" put the old number of thirteen eggs under a hen, whatever be the weather, the temperature, or size of the hen, quite forgetting that in cold weather she cannot generate heat enough for so many eggs. I believe, that if we were satisfied, to put not more than seven or eight eggs under a hen, at any rate, till warmer weather, better results would generally be obtained, both in the number and strength of the chicks. Yet, with all this, there are still contradictions which I cannot explain, nor do I believe that travelling (if well packed) has much to do with failure; for, on two occasions, I have sent boxes of twelve eggs each to Switzerland. The results were twelve chickens and ten chickens. This year, I sent away twenty-four eggs, which produced seventeen chickens; and of the same sort of eggs, I sat the same day, for myself, two sittings of eleven each. One lot gave me nine chicks, the other only one—a sickly thing, which died. This was possibly the fault of the hen; but, had I been so unlucky as to have sent the last lot to "R. G.," he would have supposed I had used him ill.

I have now on one of my Game walks, a Game cock who had great fame at Anerley, by being disqualified "*for a spliced tail*;" after which discreditable exposé, I claimed him at the Show price. He was so well known as a brood cock, that his late owner has made me great offers to restore him. He justified his fame last year, as the father of the Game chickens with which I won the prize at the Crystal Palace. He is at a good walk, and perfectly well; yet this year, up to April 1st, eggs from his hens had only produced five chickens. They are now, however, promising very well. Had I, unluckily, sent any of these eggs away (and I considered them very first-rate), I might have been set down for a rogue. I name this, to show how easily disappointments may occur.

I was asked, not long ago, by a lady, "whether I would guarantee every egg." Of course I declined, and of course lost a customer. I *can* only honestly send to others the same eggs I use myself. As yet, this year, I have had no complaints, though, of course, some *will* come; and when they are reasonably and courteously made, they will, I can promise, be courteously and liberally met. I am proud to say, that in a long and successful poultry career, I have had few "troubles," or "disputes." I can now number as "*friends*," many whose acquaintance I only made by supplying them with eggs, or birds. It gives me great pleasure to receive (as I often do) letters from purchasers, announcing success from the produce of my eggs. I also possess some prize birds from eggs I had sold, and had then purchased the produce, and *almost* the best Spanish cockerel I ever saw was at a Show about two years ago, from an egg obtained, I think, from Mr. Bailly. So "R. G." will see, that prize poultry *are* sometimes to be got from bought eggs.

No doubt, the most certain way for "R. G." to get good poultry, is to buy *birds*. To go, see, and select what he likes, and to take them away, then and there. He cannot then be disappointed; but, though sure, this is the most expensive mode, for people will not part with their best birds, except at corresponding prices. For many of mine, I have refused almost fabulous prices.

The other and the most economical mode, is to buy eggs from those whose characters would lead "R. G." to suppose they would not do a dirty thing on any consideration, much less for a few eggs.

If "R. G." likes to apply to me, under his real name, I will, at least, try to convince him that "*there is somebody to be found*, who will act honestly, and sell the article he advertises." But as, in spite of all the trouble, and expense of breeding race horses, and short-horns—such animals as Touchstone, and Butterfly, are few and far between—I must warn "R. G." that prize chickens are seldom to be found in one or two batches of eggs, even from the best birds, and then, not without trouble, care, and risk.—W. W. H.

NEWCASTLE-UPON-TYNE POULTRY SHOW.

AMONG amateurs of poultry, the idea was almost universal that the Liverpool Show would have been the concluding exhibition of the season; results, however, have proved the contrary, and it is really somewhat difficult to class the Newcastle Show, just concluded, as properly belonging to the winter or summer Poultry Exhibitions. Perhaps, however, it will rather serve as the connecting link between them; as among the birds there competing were not only nearly 400 pens of as good adults as ever were exhibited at a local Show, but likewise several pens of both Cochin and also Grey Dorking chickens, already as large as the English hen Pheasant. This early production, and after-careful management of chickens, evinces how sensitively alive poultry amateurs are to the necessity of early hatches, if hopeful to secure success at the onset of our Chicken Shows, during the coming summer. It is our pleasing duty to record, that this meeting was universally admitted to be by far the best hitherto held in this locality. At opening it was exceedingly well attended, and had the weather, soon after midday on Wednesday, proved equal to that of the early morning, no doubt the number of visitors would have been greatly increased; but, most unfortunately, a very unexpected snowstorm stopped all transit on many of the railways in the neighbourhood. Still, even under this adverse casualty, the public support received by the Committee was fully equal to their anticipations.

Since the last meeting of this Society, the Newcastle Corn Market has been entirely rebuilt, and certainly now affords every possible convenience for a Poultry Show. The light is excellent, and the building is perfectly free from draughts of any kind. The area of this new structure is so extensive, that from 600 to 800 pens might readily be arranged in single rows, leaving (even then) a space of at least 12 or 14 feet in width for each avenue allotted to visitors. With such an amount of accommodation available, there is but little fear as to the Newcastle Show of Poultry; its importance must necessarily increase year by year, and this result is rendered still more certain, when it is considered how highly conversant are the gentlemen forming the Committee, with every possible requirement necessary to success. This was their sixth annual meeting, and, to add to the competition, a great variety of useful premiums were offered by inhabitants of Newcastle, which were quite unusual at such exhibitions, including guns, boxes of carpenter's tools, cruet-stands, timepieces under glass shades, papier-mâché inkstands, &c.; and, in common justice to the generous donors, we must add, they were undoubtedly of the intrinsic value they represented.

The *Game* classes competed without any restriction of colour, consequently the entries were both numerous and first-rate: *Duckwings* proved to be the victors. The *Grey Dorkings* were superior; and the Rev. G. Hustler maintained his high position. The *White Dorkings* were likewise very good. The *Spanish* classes, and all the varieties of *Cochins*, were well represented; the competition in some of these classes being very severe. The *Malays* were exhibited in very inferior feather. The *Hamburgs*, both *Golden* and *Silver-*

pencilled, were not worthy of any particular notice; but the *Spangled* birds, of both varieties, have very rarely been equalled. The *Golden-spangled* were decidedly good throughout, the neighbourhood being notorious for the excellence of these fowls, and also the extraordinary care taken in breeding them. The *Polish* of each variety were good. In *Sebright Bantams*, the falling off was very great; indeed, it was a difficulty to meet with even a passable pen.

The *Turkeys* and *Geese*, however, were most meritorious. In the *extra class*, was exhibited one of the most singular fowls we ever remember to have seen anywhere. The poor bird was found "chicking" among the burning ruins of Sebastopol, on the entry of the allied troops. She is about the size of a common-booted Bantam, spangled black and white, with legs even shorter than the Scotch Dumpie fowl; she is very heavily bearded, and the feathers covering the orifice of the ear extend also completely over the eyes, so that feeding from scattered corn is a great difficulty. It was likewise lark-crested.

The sole responsibility of the awards rested on Mr. Edward Hewitt, of Spark Brook, Birmingham, who has officiated for this Society on three previous occasions; then, as now, his awards gave unquestioned satisfaction. The birds were carefully attended, and the promptitude of their return all that the most anxious owner could wish for, nor did a single accident occur to any.

OUR LETTER BOX.

BLACK POLANDS.—Will you correct a mistake into which Mr. Ray has fallen, in his letter at page 14. He states that the first prize at Preston (in the class—Polands, any other variety) was awarded to a pen of Black Polands, the second to Black with White Crests, and the third to White. The first prize was awarded to Mr. Dixon, of Bradford, for Black with White Crests. The second to Mr. Ray, for Black with White Crests; and the third to White. I quite agree with Mr. Ray, that at all the principal Shows there ought to be a separate class for this useful and beautiful variety, and I have no doubt the Preston Committee will take the hints given, and have a separate class another year.—JOHN JACKSON, *Preston*.

"CHAMPION OF THE POULTRY WORLD AND A SCARLET PETTICOAT."—We shall be glad to be able to inform a correspondent how to communicate with this lady. If she will favour us with her address, we can forward any letter our correspondent may send.

SPANISH CHICKENS LAME (J. L. D.).—You force them too much. Keep them in an outhouse, and not "covered with a carpet near a fire at night!" Omit the Indian meal, hemp seed, and bread crumbs, as well as the Onion tops. Your barleymeal, chopped egg, Lettuce and Cabbage leaves, will be generous diet enough, and let them have plenty of exercise, with no greater shelter than that of a dry outhouse.

PIGEON TRAP (Pigeon).—The best form of pigeon area, or trap, is that mostly in use among London pigeon fanciers. It consists of a square frame of lattice-work, the sides and front opening with falling doors, which may all be drawn up at once with a line. Size, about two feet six inches, or three feet square, and fifteen or eighteen inches in height. On either side of the three doors are the bolting wires swinging inwards, to admit any pigeons that may be shut out, and falling against a small ledge, to prevent those inside from escaping. On the top, spaces about four inches square are left open, called tipping-holes, through which the pigeons can drop in, but cannot fly out, on account of their spread wings.

COCK AND HEN PIGEONS (Idem).—A cock pigeon may be distinguished from a hen by his louder and bolder coo, also by being thicker about the cheeks. The price of a pair of Dragons varies with the quality, from 3s. to 30s. per pair.—B. P. B.

AUSTRALIAN BRONZE-WINGED PIGEON.—May I beg of you, or any of your correspondents, who have kept the Australian Bronze-winged Pigeons, which are now sometimes exhibited at Shows, to tell me if these birds breed in confinement? Are they sufficiently domesticated to be trusted to fly out? Whether they ever breed with other sorts? and, if so, will the cross-bred produce breed again? Any information respecting these inquiries will much oblige—B. P. BENT.

LONDON MARKETS.—APRIL 19TH.

POULTRY.

The market is tolerably supplied with poultry, although much is of an inferior description. Small chickens would appear to be more plentiful than they were last year, a natural consequence of a mild winter. The same cause makes large fowls scarce.

	Each.		Each.
Large Fowls ...	6s. 0d. to 7s. 0d.	Guinea Fowls .	2s. 9d. to 3s. 3d.
Small ditto	5 6 " 6 0	Turkeys	0 0 " 0 0
Chickens	3 0 " 4 0	Pigeons	0 9 " 0 10
Goslings	7 0 " 7 6	Rabbits	1 5 " 1 6
Ducklings	3 6 " 4 3	Wild ditto	0 10 " 0 11

WEEKLY CALENDAR.

Day of Mth	Day of Week.	APRIL 27—MAY 3, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
27	TU	Cytisus filipes.	30.061—30.011	50—32	N.	—	42 af 4	13 af 7	4 2	14	2 28	117
28	W	Dielytra spectabilis.	30.051—30.021	47—23	N.	—	40 4	15 7	rises	☺	2 38	118
29	TH	Daviesia angulata.	30.049—30.010	60—27	N.W.	—	38 4	17 7	9 38	16	2 47	119
30	F	Daviesia juniperina.	30.098—30.040	55—33	N.	.01	36 4	18 7	10 48	17	2 55	120
1	S	ST. PHILIP AND ST. JAMES.	30.087—30.070	56—37	N.	—	34 4	19 7	11 50	18	3 3	121
2	SUN	4 SUNDAY AFTER EASTER.	30.073—30.016	56—26	E.	—	32 4	21 7	morn.	19	3 11	122
3	M	Dillwynia sericea.	30.133—30.115	57—31	N.E.	—	30 4	23 7	0 39	20	3 18	123

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 61.2° and 39.1°, respectively. The greatest heat, 81°, occurred on the 28th, in 1840; and the lowest cold, 20°, on the 2nd, in 1855. During the period 129 days were fine, and on 88 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

EARLY attention should be given, in dry weather, to the destruction of weeds; for it should be remembered, that every weed that is allowed to grow now, will very soon be the parent of thousands.

BEANS.—Earth-up the early crops. Dig between the rows with a fork. Make another sowing.

BEET.—Sow a full crop. This is the best time. Sown earlier, it grows too large.

BROCCOLI.—Sow the late sorts.

BRUSSELS SPROUTS.—Prick out young plants of the earliest sowing, to get them stocky.

CAULIFLOWERS.—Elevate the handglasses, loosen the soil between the plants, and give them a good soaking with manure water.

CUCUMBERS.—Stop the young plants intended for ridges; shift them into larger pots, if they require it. The plants in the frames to be sprinkled with water, and also around the sides of the frames, when the heat of the day dried the soil, early in the afternoon, and the frames closed up when the sun is on the decline, to produce a moist, genial atmosphere.

DWARF KIDNEY BEANS.—Sow in a sheltered situation.

LETTUCE.—Water to be given to the early ones, if necessary; and some of the spring-sown in frames to be planted out.

PEAS.—Sow for a succession.

POTATOES.—Hoe between the early crops as soon as they appear above ground. Where the unfavourable state of the ground, or any other circumstance, prevented the getting in of the main crops, it should be done at the very earliest opportunity.

SAVOYS.—Prick out young plants of the earliest sowing.

SCARLET RUNNERS.—Sow.

SEA-KALE.—Cut off the flower-stalks, if not wanted for seed.

SPINACH.—Attend to the thinning of the early crop.

TURNIPS.—Thin.

WATERING.—A liquid manure tank in the dung-yard, or frame-ground, will now be most useful for gardening purposes. All growing crops will be much benefited by its application. A sprinkling of soot over the ground, amongst growing crops, in showery weather, will do good service to vegetation, and be very unpalatable to all crawling insects.

FLOWER GARDEN.

The roller and scythe should be in frequent use, to establish a firm and even sward or lawn; for if a good foundation is not now made by such means, no after-attention will sufficiently repair the neglect. All edgings, that have been hitherto neglected, should be put in order for the summer; the walks to be well filled with gravel; and the roller to be frequently passed along the edges of the grass, to level them down to

the walk, which takes away the harshness of the outline.

BEDDING PLANTS.—Lose no time in potting off young cuttings as soon as they are sufficiently rooted, and seedlings as soon as they will bear handling. To be kept close for a short time, until they become established with new roots, when they may be gradually inured to the open air. The *Calceolarias*, *Verbenas*, *scarlet Geraniums*, and such hardier kinds, to be plunged in coal ashes, in frames, or in some sheltered place, in the open ground, where they can be easily protected with a few mats, or any other slight covering, at night. Select some well-formed plants of *Petunias*, *Fuchsias*, *scarlet Geraniums*, &c., to form large specimens for vases, or for planting out singly, in conspicuous places. Give them their final shift, and stake the shoots well out.

CHRYSANTHEMUMS.—Propagate by cuttings, or by taking off the young-rooted suckers, which should be potted singly in small pots, and placed in a gentle heat.

HARDY ANNUALS.—Sow, for late flowering.

HERBACEOUS PLANTS.—Thin the shoots where crowded. Many droop and die, particularly in dry summers, through the exhaustion consequent on overgrown plants.

HOLLYHOCKS.—Plant in rich ground, deeply dug, and well manured with decomposed horsedung.

PANSIES.—Sow, for autumnal flowering.

POLYANTHUSES require a shady situation, as they are very liable to the attacks of red spider.

RANUNCULUSES.—If worms disturb, a watering with lime water will be disagreeable to them, and will not injure vegetation. A small lump of lime, about one pound, dissolved in two or three gallons of water, will make it sufficiently strong for the purpose; to be used in a clear state.

ROSES.—Give standards and dwarfs a good soaking with manure water.

WILLIAM KEANE.

THE HORTICULTURAL SOCIETY'S MEETING
IN ST. JAMES'S HALL.

ST. JAMES'S HALL has been described very minutely and fairly, within the last few weeks, throughout the "round of the press," and if I had room and leisure, I do not think that I could make a better picture of it, for the mind's eye, or one which would be of much advantage to gardening. It must not only be seen, but be very attentively studied, in order to teach us in the flower garden how to combine colours, and certain quantities of colours, if I may so speak, to produce magical effects. At the eleventh hour Her Majesty signified her intention of killing three birds with one stone—see the Hall, see the flowers, and see the Prince Consort do the first duty of the office of President of the Society, which he condescended to occupy. Although the warning was so brief, all the

arrangements were complete; they were made by Mr. McEwen, the chief gardener of the Society, and were carried out by his brother, Mr. John McEwen, and assistants from the garden, and the house in Regent Street.

The nurserymen and the great exhibition prize-men, in the neighbourhood of London, came out most handsomely, and profusely, to decorate the Hall, in addition to the contents of the prize-lists. The Hall was, indeed, "decorated" at last, and it struck me, as the first impression, on entering, that with a less brilliant display of strong-telling colours from flowers, this Hall would be ruinous to a display of plants in bloom. But all this was so compactly pressed in the old red tapes of the Society, that the very strongest, or, at all events, the very reddest of the old tapes, snapped asunder like anything, and the confusion which followed baffles description; every black leg in London could have got into the Hall, even when her Majesty was there, with the greatest ease and comfort; for such legs take comfort in confusion. The bruised ribs at the close wicket, at Chiswick, the other year, was as nothing to the rush and disorder on opening the doors, just ten minutes too soon; for her Majesty was preparing to leave the Hall at this time, and the rush and confusion of lords, ladies, and commoners, as they encountered the Royal procession down the grand staircase, and through the vestibule, made her Majesty—God bless her!—laugh most heartily; but the Prince Consort looked grave; the Princess Alice seemed to enjoy the fun amazingly, as did Lady Macdonald, who accompanied her Royal Highness behind her august parents.

Your humble servant had to write to the Council of the Society to arrange better rules for the ensuing Meetings, as he was not very fairly dealt with himself by the unpaid Secretary of the Society, who took advantage of the confusion, caused by her Majesty's visit, to deprive me of my prerogative rights, but I determined to disbud that act of discourtesy promptly, and, my word for it, you shall hear no more about it.

Her Majesty and the Princess Alice admired *Farfugium grande* particularly, and also two or three very dwarf plants; a new dwarf variegated Geranium, with three or four tints in the leaves, in the collection from the Wellington Road Nursery; a silver fairy-looking Caladium, from France, and exhibited in a collection from the Messrs. Low, of Clapton Nursery; and a pale greenish-yellow flowering Iris, from the Crimea, with leaves not more than four inches long; and when her Majesty was told that the "roots" of this alpine Iris were gathered by Prince Edward of Saxe-Weimar, during the siege of Sebastopol, she seemed to admire it the more on that account. Mr. Owen Jones came in for the royal recognition of his inimitable art in colouring and designing.

The Bishop of Winchester, as one of the officers of the Society, was there to greet and bless her Majesty. After the Prince Consort conducted her Majesty to the royal carriage, through that confusion, he returned into the Hall, took the chair, and Dr. Lindley gave a brief and rapid sketch of what the Society had done in former days, and drew the President's attention to the June-like display of flowers before them in the middle of April, in corroboration of the "sound judgment and practical good sense" of the Society. Spoke of cross breeding in the hands of its British parents, Knight and Herbert; in its results in the *British Queen* and *Princess Alice Maud* Strawberries, in the way of fruit; and for flowers, they were there in sufficient numbers to impress any one with the superiority of cross breeding over the mere scientific compilations of botany. The new *Clianthus Dampieri* was pointed

out, as I had done, last month, at the Wellington Road Nursery.

After this, the Bishop of Winchester, whose voice filled the stupendous vault in every part, thanked his Royal Highness for condescending to become the President of the Society; and, in a few pleasing complimentary sentences, his Lordship hinted at the fact, that his Royal Highness was not one who undertook plurality of offices with a view of escaping hard work in any good cause. The Prince Consort returned the compliment, and said he felt greatly obliged for the confidence which has been shown to him; and, after a graceful acknowledgment of the merits and great worth of our late President, he congratulated the Society on the beauty and usefulness of the plants composing the "show," and then withdrew. The Hall is too much for the compass of the Prince's voice; and as for Dr. Lindley, who appeared to be labouring under some nervous complaint, one could not distinguish his words at ten feet from where he stood; while, of the Bishop of Winchester's voice, every syllable could be heard at the farthest end of the Hall.

The Hall was arranged with flowers as Willis's Rooms were with fruit tables; one eight or nine feet wide down the centre, and one on each side, with passages all round; two cross tables along the farthest end from the "chair," the place for which is a platform, four or five steps up the orchestra, in amphitheatre fashion, with the organ at the top, and from fifteen to eighteen feet above the level of the Hall floor.

The fruit occupied the first step of the amphitheatre, just behind the chair, and other two steps or stages in front of the chair were filled with magnificent Roses in pots, and the principal Orchid collections in front of that, with a collection of six Azaleas at each end. A most judicious and telling arrangement; but it was behind the chair, up the ascent to, and beyond the great organ, that the climax of the composition was most telling; it was an Exotic hanging grove, resplendent with bloom, and the plants were most admirably matched and set for effect.

First, in the centre, in front of this grove, an immense mass made by four huge Rhododendrons, from Sion House, was flanked on either side by a collection of Camellias from the Messrs. Jackson, of Kingston, and from Mr. Halley, of Blackheath; and next from the centre, collections of prize Azaleas; those on the right hand side were from Kingston; then, all above, in the hanging grove, were huge masses of Azaleas; and others of equal merit, from plants not in competition. The side and end galleries were also furnished most artistically with plants in good will, some standards, some tall, some very bushy, some in full bloom, and some for their leaves only; and one of the side tables in the body of the Hall, and eighteen yards long, was filled with the most beautiful plants that Mr. Veitch, of the Exotic Nursery, Chelsea, could furnish from his extensive establishment, and all this "free," and for the good of the Society; that is, not for competition.

There were two collections of fancy Geraniums, and two of Cinerarias, on the first set of cross-tables at the farthest off end of the Hall; and early Tulips, Azaleas, and Camellias on the last stage there. Then turning on the south side, there was a large collection of fine-leaved plants; another collection from Mr. Standish, and Mr. Fraser, of Lea Bridge Nursery; another from the Messrs. Henderson, of the Wellington Road Nursery; another from the Messrs. Low, of Clapton; another from the Messrs. Henderson and Co., of Pine Apple Place; and the rest with collections from Mr. Glendinning, and the Messrs. Cutbush, of Highgate and Barnet, and some private gardeners.

The centre platform, along the Hall, began at the end next the chair, with a large collection of Hippeasters

(Amaryllis), from Mr. Hamp, and Mr. Bassett, and a belt round them of Polyanthus, Narcissus, and other species from Mr. Cutbush, of Highgate; the next, a collection of Roses on Manetti stocks, from Mr. Francis, and another from Messrs. Lane and Son; also, a collection of Moss Roses, from Messrs. Lane; then a collection of Cinerarias; and at the farthest end, a large collection of Hyacinths, and other bulbs, from Messrs. Cutbush and Son, Highgate.

Now, although the unfortunate inward complaint, under which our Secretary was labouring that morning, had led him to mistake his office, in assuming the high functions of our Council, and presuming on my usual good nature, had locked the Hall door in my face, and took in his own reporter, just as Mr. Sabine used himself, when he was a clerk in our office; I say, notwithstanding all that, the moment I got inside and told my tale to the exhibitors, ten of them offered to assist me on the spot; they did assist me, and between us I was enabled to complete my report. Meantime, I pray every one of these exhibitors, and their friends, and patrons, not to take the smallest affront against the Society, on my account. We want all your zeal and patience; the Council are of most honourable and practical men, and will oil this wheel with one stroke of the pen. There is a great deal to put up with in the office of a Secretary like ours, and the wonder is, that we hear of so few blunders, when things go out of the regular course.

Messrs. Cutbush, of Highgate, had the first prize for a collection of Hyacinths, along with which he placed a collection of seedling herbaceous Calceolarias, and a fine plant of his *Blanchfleur* Geranium, which is to be let out next autumn; also, a collection of early Tulips, for which he had the second prize. Mr. McIntosh, of Hammersmith, taking the first prize for Tulips.

Next, a collection of Roses, in No. 8-pots, from Mr. Francis, took the first prize, and Messrs. Lane and Son the second prize, for the next best group of Roses. In the latter, *Triomphe de Paris*, *Prince Leon*, and *Leon des Combats* were the best reds, and *Souvenir d'un Ami* the best blush Rose, and *Narcisse* a yellowish tint; with these was their collection of Moss Roses. There was, also, from the Messrs. Lane, a collection of standard Azaleas, set at intervals along the centre of this, the middle stage. These had an excellent effect in relieving the evenness of the large groups under them, a proof of all I said in favour of such standards, if such proof was wanted, against the "fly-flappers" of Dr. Lindley. A group of Cinerarias here, from Mr. Wiggins, gardener to Mr. Beck, of Isleworth, had the second prize; and another from Mr. Northcote, gardener to Colonel Wigram, of Wanstead, had the third prize; while Mr. Turner, of Slough, took the first prize (as usual) in these Cinerarias, on another table. One Cineraria, called *Perfection*, was the best seedling, and the best in Mr. Turner's prize lot. It has a soft, creamy, white centre, and a thin edge of fine purple. *Optima*, light, next best; *Regalia*, best self crimson; *Mrs. Coleman*, light, and *Sir Charles Napier*, best blue, and a splendid seedling called *Wonderful*, a deep purple, were the best of Mr. Turner's seedling group.

For the best Amaryllids, Mr. Bassett, gardener to R. Holford, Esq., was first, and Mr. Hamp had a third prize, for the next group of them. I have the names of the best of them also, the band of Narcissus, eighteen kinds, round these Amaryllids, was a happy arrangement, and took a first prize to Messrs. Cutbush and Son, Highgate.

Mr. Windsor had a first prize with fancy Pelargoniums, and Mr. Turner, of Slough, the second. The first of these was too far gone, and fast losing their petals; and the second was hardly in yet. Here Mr.

Turner had groups of two very beautiful variegated Geraniums, *Bijou* and *Perfection*. Here, also, Mr. Turner took a first prize for twelve best Auriculas.

Messrs. Lane and Son had a collection of Rhododendrons, chiefly the yellow kinds, but Mr. Standish took the first prize for them; one of them, called *Limbatus*, was the newest novelty; and one, called *Townsendii*, perhaps the next best: it is called after his foreman, a good sign; and *Erica Burnettiana*, along with them, is a late or early winter-blooming excellent kind, according to culture. Cramp it for pot room in the autumn, and it blooms most freely through the winter; and giving it a large pot spoils it.

Mr. McIntosh, of Hammersmith, who had the first prize for Tulips, had also the second for Hyacinths, in eighteen distinct sorts. He had four kinds of dwarf yellow Tulips for beds, and *Vermillion Brilliant* was his best red.

Then followed a very fine collection of cut Roses, from Mr. Paul, of Cheshunt, but not for competition; and a box of cut Camellias, from Mr. Halley. After these, four Azaleas from Mr. Rhodes, but the prizes for Azaleas went thus: 1st, Mr. Wilson, gardener to J. Elger, Esq., Putney; 2nd, Mr. Carson, from Non-such Park; 3rd, Mr. Morris, the well-known gardener to Coles Child, Esq., the Palace, Bromley; and 4th, or extra, to John Alnut, Esq., F.H.S.

The Azaleas in six kinds, by nurserymen, went as follow: 1st, Mr. Turner, of Slough; 2nd, Messrs. Lane and Son; and 3rd, Messrs. Fraser, of Lea Bridge Road. The kinds I shall mention, as they come in on my round. Six large pots of Lycopods, Mr. Morris. Six small Camellias, Mr. Robinson, Blackheath. Basket of variegated Geranium, *The Burning Bush*, from Mr. Halley. Collection of large, fine-foliaged plants, from Mr. Rhodes, of Stamford Hill, second prize; and Mr. Morris, first. Next in order, a large number of fine *Farfugium grande*; new double-flowering Peaches, lately from China; and an *Erica Sindiana*, from Mr. Glendinning.

Next a collection of four Azaleas, from Mr. James Norcote, Wanstead. One of these was the old yellow *Chinensis* or *Sinensis*. Here followed a large collection of miscellaneous plants, from Messrs. Henderson and Co., of the Pine Apple Nursery. Two Tropæolums, of the Lobbiana breed, called *Dr. Livingston*, which is, after *Brilliant* and *General Havelock*, a fine orange scarlet. *Eucharis amazonica*; a beautiful specimen of *Bouvardia longifolia*, snowy white; *Statice brassicæfolia*; *Telopea speciosissima*, the fine Waratah of Australia, in bloom; double-crimson Peach; with Orchids, greenhouse plants, and a plant of *Rhopala de Jonghii*, a magnificent foliaged plant; and several others. Pass on to six well-grown plants, from Mr. Cutbush, of Barnet, brother to him who beats "the blue bonnets over the border;" they were *Erica florida*, and *Eriostemon cuspidatum*, *Tetratheca ericifolia*, and *Chorozema ilicifolia*, with *Acacia Drummondii*, and *Boronia tetandra*.

Then Mr. Alnut's four Azaleas; three red, and *Exquisita*, very good. Next seedling Azaleas, from Mr. Epps, of Maidstone. Then a new species of Epacris, a blush flower, and *Rhododendron lancifolium*, from the Messrs. Jackson, Kingston; who were followed by the Messrs. Henderson, of the Wellington Road Nursery, with a large collection of mixed plants, such as *Tussilago spectabile*; three kinds of new variegated Geraniums; *Triteleia* or *Triteleja* (not Tritelia), an excellent little bulb for "ITALICUS," with Snowdrop leaves and starry-white blossoms; *Begonia splendida*; purple Petunia, with a white edge, very beautiful; a new kind of Gardenia, Conifers, new Camellias from China, and many others too long to name.

Then the Messrs. Low and Son, of Clapton, with a

collection of eight new *Caladiums*, not named, one of which, the fairy, silvery *Caladium*, her Majesty and all her subjects there, that day, thought was the best gem of all that were at the Show. A box of twelve trusses of *Rhododendron virgatum*, a lovely dwarf, bluish flowered kind, from Sikkim, I suppose; *Zeyria macrophylla*, an exhibition new plant, an Asterwort, with white starry flowers all over, and others. *Gardenia Plantii*, a standard from Mr. Hamp, a good red seedling Camellia, mentioned at the Bazaar at the Crystal Palace, from its owner, Mr. Christmas, Grove Lane, Camberwell.

The Messrs. Fraser's six Azaleas, *Vittata*, and *Vittata punctata*, two fine striped kinds, were two of them; also, *Rhododendron Thomsoni*, a dark purple bell, in good trusses, from Sikkim; also, a large *Acacia Drummondii*, followed by Mr. Carson's four Azaleas, *Coronata*, *Magnifica pleno*, *Exquisita*, and *Iveryana*, very fine. Then Mr. Morris, four Azaleas, and a collection of hybrids of the *Amena* breed, from Mr. Standish, who also had *Gaultheria furens*.

Then six huge Roses, in No. 4-pots, from Messrs. Lane, for which they took the first prize. *Debonienseis*, with twenty-one full blown magnificent Roses, was the best specimen of it yet exhibited. *Triomphe de Paris*, *Duchess of Sutherland*, *Jules Margottin*, *General Jacqueminot*, and *Souvenir d'un Ami*, were all first-rate; and six more kinds from Mr. Francis, took the second prize, and richly deserved it. These magnificent Roses, thus early, were in the mouths of all the practicals, like sugar plums.

Below them, and in front of the chair, were the competition Orchids, Mr. Carson being first, and Mr. Morris second. The latter had a distinct kind, quite new to the Exhibition, of *Zygopetalum Mackayana*, with stiff, close-flowered stems; and Mr. Carson had a *Lycaste pubescens*, which was not exhibited here before. The rest of these Orchids were all fine, but more known.

Then Messrs. Lanes' six Azaleas, fine; and six more from Mr. Cutbush, of Barnet, all of the best kinds. Then an Orchid from Messrs. Parker and Williams, called *Dendrobium lituiflorum*, in the noble section, or near it.

Then the eighteen yards of the choicest plants, from Messrs. Veitch, filling nearly one whole side of the Hall, and not exhibited for prizes. The rarest of them was *Clianthus Dampieri*, the most brilliant, and at the same time the most unearthly aspect of all the Pea-shaped blossoms; the plant looking very much like some soft *Astragalus*. A very large *Rhododendron jasminiflorum*, ditto *Dendrobium onosmum*, and *Vanda suavis*, *Camellia Valterredo*, a fine imbricated deep rose. Standard Azaleas; fine-leaved plants; Palms; greenhouses, and stoves, and Heath houses, all contributing to this display.

After these, six Azaleas from Messrs. Fraser, and six Azaleas from the Messrs. Jackson, followed by a collection of Camellias from Mr. Halley, which took the first prize. Then the magnificent *Rhododendron* from Mr. Iveson, gardener to the Duke of Northumberland, Sion House; and then another collection of Camellias, from the Messrs. Jackson, to match those from Mr. Halley; and these had the second prize. Of course, Mr. Iveson took the first prize with his most noble *Rhododendrons*.

This brings me to the end of my tether in that circuit; and now for the odds and ends. - *Vanda gigantea*, from R. Warner, Esq., shows it to be below expectation. It has a short dumpy spike a few inches long only, and six orange-coloured blooms with brown spots.

A pot of a pale yellow-flowering *Iris*, not more than three or four inches long in the leaves, and the flowers

completely overshadowing them, from the Crimea, sent to Messrs. Veitch, by the Prince Edward of Saxe-Weimar. I think we have this *Iris* in the Experimental Garden, from Crimean seeds.

The prizes which are not given here, were not affixed to the plants, at three o'clock in the afternoon, when I closed my account.

There was an abundance of Apples; very few Pears; excellent Grapes; very fair Strawberries; and seventeen Pine Apples, with Oranges and Lemons of English growth, and Melons from abroad. First prize, for *Pines*, to Mr. Robinson, gardener to E. R. Turner, Esq., Bishop's Waltham. This fruit was not named, it looked like a kind called *Charlotte Rothschild*. Second prize to Mr. James Gilham, Isleworth. Third prize to Mr. Clement, Oak Hill, East Barnet. *Grapes*.—Two sets of *Black Hamburgs*. Mr. Hill first prize, as usual; second to Mr. Dodds, the worthy gardener to Sir John Cathcart, Bart.; and third to Messrs. Sparry and Campbell, Queen's Graperies, Brighton. There were two pots of Grapes from Mr. Ingram, Highgrove, Reading, gardener to J. J. Blandy, Esq., which took first prize; and White Grapes from Mr. Alderson, South Lambeth. *Strawberries*.—First prize to Mr. Raile, gardener to Lord Lovelace. Second to Mr. Clarke, gardener to Lord Darnley. Third to Mr. Ingram, gardener to J. J. Blandy, Esq.; and four fine pots of plants of Strawberries, in fruit, from Mr. Raile. Mr. Snow, gardener to Earl de Grey, took the first prize for dessert and cooking Apples, among which were *Reinette du Canada*, *Dutch Mignon*, *Alfriston*, and "an unknown kind excellent for keeping." Mr. Newtown, gardener to G. S. Graham, Esq., Enfield Chase, took the second prize for dessert and kitchen Apples, and Mr. Ingram, gardener to Mr. Blandy, took the first and only prize for dessert Pears, which were *Ne Plus Meuris*, far gone; and *Easter Beurré*. The Oranges and Lemons were from Mr. Richards, of Acton. Mr. Snow had a basket of his matchless *Green Cos Lettuce*, very fine; and Mr. Ingram, gardener to Mr. Blandy, had a fine brace of Cucumbers, and Mr. Solomons, of Covent Garden, had two dishes of French Apples, and two dishes of French kitchen Pears, and both the Pears were wrongly named. He had also two Melons, and other things.

D. BEATON.

KIMPTON HOO.

(Continued from page 4.)

I HAVE been given to understand, that Lady Dacre is very partial to ribbon bordering. Supposing that the walk mentioned in my last notes was so placed as to have a background of evergreens on each side, and space also left for a border on each side, a grand avenue of lines of colour might thus be formed, and space found for many flowering plants, that are now grown in the kitchen garden. A little to the westward of the south end of this walk, in a part of the wilderness shrubbery, is an interesting fernery; the plants collected, and almost entirely attended to, as respects watering, planting, and transplanting, by Lady Dacre herself. The site had either been a dell hole, or a place dug out on purpose. The sides are formed in grotesque fashion, with roots and stones, and there the Ferns are grown. I saw almost every British variety, and many of them fine specimens. The centre is gravel, and studded with grotesque stumps and roots, some of which form comfortable rustic seats. I saw some garden pots with water, for her ladyship's use. As the water is taken to the top of the mansion by means of a water-ram, a small pipe carried that length would supply a miniature fountain, and give the idea of refreshing coolness.

How nice the contrast would be to get to this fernery, after passing along through belts of evergreens, and glowing lines of colour, and then return through the wilderness wood. The fernery may be extended to any amount, and close to it are some beautiful Weeping Willows:

The main enclosed space at the mansion is divided by walks into three squares of beautiful turf. Two on the east and south-east side, and one on the south side. The two first have vases on the four corners; and, as a good show of green turf was desired by his lordship, a row of long and circular beds alternately, for flowers, goes round the sides, leaving grass in the centre. On the south side, a small group of beds is arranged in the centre, leaving the four corners for lawn. Under such conditions, a better arrangement could hardly have been desired, unless, perhaps, leaving the east front to lawn and vases, and artistic ornaments, and filling the south front more entirely with the flower-beds. As it is, the arrangement looks very well, and gives the ideas of ease and roominess. The beds were chiefly fixed upon the mixing principle, and the following are those that pleased Mr. Cox best, and which seemed to answer well for that style of planting: White *Ivy-leaved Geranium*, and *Brilliant de rose Verbena*; the latter kept well-pegged down. *Punch* scarlet *Geranium*, and blue *Salvia patens*; the latter a little pegged. *Flower of the Day Geranium*, and *Danesbury* blue *Verbena*. Variegated Balm, and *General Raglan Verbena*. *Ageratum*, and *Punch Geranium*. Variegated crimson *Ivy-leaved Geranium*, and *Mrs. Holford Verbena*; the latter well-pegged down. White *Ivy-leaved Geranium*, and *Purple Perfection Verbena*. *Flower of the Day Geranium*, and *Blue Bonnet Verbena*; the latter scarcely high enough. *Mangles's Variegated Geranium*, and *Annie Laurie Verbena*. *Trentham Rose Geranium*, and *Heliotropes*. There were also some fine beds of the Variegated *Alma Geranium*, the best of all the variegated kinds, being a bright scarlet, and growing freely. I suspect it will be long before any neighbour can equal Mr. Cox, with the stock of this fine bedder.

I find I must pass the kitchen garden with merely stating, that it is very fertile and fruitful; that the walls are well covered with excellent bearing trees; that Strawberries are generally cultivated with extra success in-doors and out-doors; that Mr. Cox obtains plenty of the double-bearing Raspberry, far on in the winter, if the weather is mild, by cutting down some rows every spring, the fruit being produced on the young canes of the current year; that Hollyhocks are largely, and successfully, grown and raised; and, along with standard Roses, give a striking appearance to some of the main walks; and that, to the credit of all concerned, great improvements have been effected here as well as at the mansion.

Mr. Cox's cottage is placed at the north-west corner of the wall enclosed space. The farm-steading is immediately to the westward. On the boundary wall, looking eastward, a vinery is placed for early and late Grapes, being in two divisions. In front of it, and near Mr. Cox's house, the forcing-frame ground used to be situated; and, I presume, all the dung for forcing had to be wheeled past his door, not of itself very pleasant, and giving to this part of the garden a littery appearance. Between Mr. Cox's house and the boundary wall, going eastward, is a large space of ground, between that wall and the river, appropriated as orchards and for kitchen cropping; and, from its proximity to the water, growing first-rate crops of Celery, &c. In a line between Mr. Cox's house and the river commodious rooms and sheds have been erected, and a large space has been cleared out for a frame ground, with a cart entrance from the highway, so that all the

manure for framing may thus easily be brought from the farmyard without interfering with, or littering, the kitchen garden. A strong Privet hedge, a green pathway, and a border of flowers down to the river, separate this frame ground from the orchard-kitchen garden. Had the Privet hedge been a few feet further back, and a background formed on both sides, an avenue of ribbon borders might here be formed with fine effect, with the tangled belt of wood beyond the river as a background in the distance; if it was deemed unadvisable to have such a thing in its more legitimate position, at the pleasure grounds. The best of it all is, that the site of the old frame ground is now occupied with a useful and elegant span-roofed house, with a few of the particulars of which I will finish these recollections.

The length of this house is between eighty and ninety feet, width about fourteen feet; side walls, height five feet, two of that glass, all opened from the ends by windlass; height in the centre, nine feet. There are two ridge boards, with a space of about a foot between them, and there the ventilators are placed, protected by an elevated cowl, or coping, with openings all along the sides to communicate with the ventilators. The rafter sash-bars, fixed, are about thirteen inches apart, and two squares in length from the roof on each side. The pathway is down the middle. Rather more than a third of the house is appropriated to greenhouse plants. The other part is divided into two, and appropriated to Cucumbers, Melons, and tropical plants; there being a bed on each side, with plenty of piping for bottom heat and top heat. The stage on each side in the greenhouse part slopes from the level of the glass, down to the pathway in the centre: the flowers are thus chiefly all under the eye. At one time gardeners kept talking about keeping the plants *near the glass*, but the Crystal Palace showed us, that where there is plenty of light, that is quite unnecessary. The system of air giving at the roof is very simple. Cross pieces are fixed across the opening, from three to four feet apart; boards are cut to fit these places, and hung by the two ends on pivots. I noticed a little peculiarity here. These ventilator boards are not hung by the centre, but nearer one side than the other; say, if nine inches wide, the pivots are three inches from the side. A turn latch is fixed on the opposite side, which fits into a groove in the ridge board. When that is turned with a stick, with an iron catch in the end, the ventilator opens by the greater weight on that side. On the short pivot side, a fillet is placed below the ventilator; on the opposite side a fillet is placed above it, so that when shut, and the latch turned in, it will be nearly air tight. The only disadvantage in this mode is, that when you open a ventilator, it stands wholly open. In this respect, it is inferior to a mode I mentioned as at work at Messrs. Lee's, at Hammersmith, where, by means of a lever, the cowl or ridge itself can be raised from a quarter of an inch to any necessary height. This is also effected at the *Node* by more complicated machinery. This plan, at Kimpton, is very simple and effective for span houses, where the side roofs are fixtures. Judging from results, it answers well.

About the 12th of the month (March) I called to see Mr. Cox, but had the misfortune to find he was from home. I took the liberty to look into this house, and found the greenhouse part well supplied with blooming plants. In one of the hothouse divisions were Vines in pots, showing strongly and setting well; and in the other division, about twenty-four feet in length, were two or three brace of Cucumbers fit to cut, and seven or eight brace half grown. R. FISH.

Error.—In the foot note, on Kimpton Hoo, page 2, the word "Silsby" should be "Lilley."

DRAINING AND CULTIVATING A LEVEL TRACT OF LAND.

THE disadvantages of certain situations are very difficult to cope with. A dry, shifting sand, or a wet impervious clay, though they may be much modified by cultivation and good management, yet they still retain much of their original character. One thing, however, is happily apportioned to all; each one is sure to be suited to the production of something wanted by the community at large, and though that fine rich soil, which is characterised by so many poetical names, is the one to which the aim of all cultivators is directed, soils of extreme character are wanted for some purposes, and it is surprising to see how they may become suitable to the production of crops, to which a widely different soil is generally thought most favourable. Excellent Black Currants are often grown on dry stony ground, while a moist, stiff soil is usually said to suit them best. The fact is, the well-being of cultivation depends on so many parts, that a defect in one of these is not always fatal to the health of the plant cultivated.

Leaving to the chemist and others to define what description of food each plant requires, and what it rejects, a glance at one of the most common of these agents will disclose a something, of which a greater difference of opinion exists, perhaps, than on anything else. Water, that all important agent so necessary to both vegetable and animal life, but against which a warfare has been waged by the various cultural politicians, in the way of expelling it from the ground; so much so that draining has been elevated into a science, and to speak a word against it has been regarded as treason to the state. Be this as it may, moist fields and wet meadows still remain, and are likely to do for many years to come; some, from insuperable difficulties in draining them, and in others, from the apathy of their occupiers, or their doubts of its efficacy; leaving the latter class to settle their own difficulties, let us see how the other can best be dealt with.

In many parts of England, there are large tracts of rich, fertile lands, lying only some two or three feet above the level of the sea, or tidal river; and, in some cases, lying even below the level of high water at spring tides; extensive embankments being made to keep back the ocean, or river, as it may be; and the water collected in this plain, or basin, is worked out by machinery, or some outlet provided for it, to empty itself when the lowness of the receiving channel enables it to do so; the communication being shut when the water rises in the river, or sea, bordering the tract in question. The evils of this latter plan being the inconvenience of fresh water collecting for several hours, without its being possible to let it out; besides which, some will find its way in from the supply above it; that, in most cases, machinery has superseded the dock-gate system of emptying the interior of its contents; then comes the question, after a provision is made for discharging the surplus water, how low should that be done? This question has often been asked, and answered in many ways. Some contending, that it is impossible to lay the land too dry; others asserting, that the rich, flat tracts of perfectly-level ground ought to have the ditches of water bordering them reduced no lower than that the standing water be two feet and a half from the surface; even less than that, they say, does good rather than harm. The facts being, that while one description of land benefits by all the surplus water being deeply and properly drained away, another is better for its subsoil to be partially saturated with it; which, being drawn to the top by capillary action, gives moisture to the crops growing thereon. A universal rule in these matters cannot, therefore, be given; besides which, Nature is so very accommodating, that a considerable amount of success will often attend means diametrically opposed to each other. Nevertheless, there are some measures better than others, and it is better to adopt the best one.

Generally speaking, flat, marshy land, on being reclaimed from the waste, is intersected by open ditches, from four to six or seven feet deep; water standing in these ditches mostly all the year. Now, where this is the case, it is useless to drain with pipes, excepting a little above high-water mark, which, in some places, is not more than two feet from the top; and if the soil for that depth be porous, and accessible to water passing freely through it, draining in the usual way can do no good; for the water rising, perhaps, a little above the mouths

of the pipes, enters them, and fills them with a muddy sediment, very difficult to remove. Unsightly, therefore, as open ditches are, there are really no other ways of getting rid of the water, excepting in that way; unless an effective piece of machinery exist at the outlet, capable of quickly removing all the water that collects there at all times; and as the tract, that may be drained to one source, is often a large one, and the principal drains being capacious—almost like canals—a powerful steam engine is often employed to lift it out, the various landholders in the district, which it drains, paying a sort of water rate to some officer or manager, who works the engine. And a specified depth is guaranteed to be maintained above water mark: the depth has, however, been altered much of late years, since draining became so much the fashion of the day; but I know of one case, in which the maximum height at which the ground surface was above the water being only twenty-four inches, and some additional machinery being employed to increase that distance to thirty-six inches, the neighbouring farmers complained much of the injury done to their crops in consequence. Now this is one of the few cases in which draining did harm, but there seemed little doubt that it really was so. A certain amount of moisture seemed necessary to render the ground fertile, and removing an undue quantity of that water did harm to a certain extent. It, therefore, behoves those having lands of this description to deal with, to consider well before they too hastily rob it of its most important agent to success.

Those not acquainted with rural affairs must not suppose that every marshy place can be properly drained, by all the surplus water being carried off by 24-inch drains. Nothing can be more erroneous; the case above only proves that a certain place was injured by that depth being increased; long-continued cultivation had rendered that depth, no doubt, available to the wants of the plants, and when it was increased, the roots probably were unable to descend so far for their food; but there are few soils requiring water so near the top, while the great bulk cannot well be drained too thoroughly nor too deeply. Perfectly level tracts cannot well be thoroughly drained, otherwise than by a great number of open gutters, or ditches, unless the outlet be some four feet or more deep; as drain pipes require some fall, while a wide open ditch will discharge its waters with very little descent.

The above will, probably, meet the wants of a correspondent, who is about making a garden in such a position as the one described; and he asks, if it would do to trench it? For vegetables, I should certainly say, yes; but by all means keep the top soil to the top again; and if the subsoil be a stiff clay, anything dug into it that will lighten it will do much good; at the same time, beware of mixing dung, or anything very tempting, in the bottom, where fruit trees are to be planted; otherwise they will root down there, and be injured in consequence, the clayey subsoil very often subsiding into the same impervious mass as before. Stones, brickbats, lime, or lime rubbish, might be dug in advantageously; and if there be a fall of one in three hundred, it can be drained by pipes in the ordinary way; but less fall than that cannot well be depended on to do much good, unless very carefully executed. However, where the water in the open ditches never stands higher than within four feet of the surface, pipe drains may start from them, and traverse the ground for 150 yards on each side, rising eighteen inches in their course; and if another ditch was 300 yards from the one in question, the drains might meet and work it all. The correspondent who wishes to make a garden, in such a situation, might perhaps do this, and fill in all intervening open ditches. But let him not depend on drain pipes alone, in a perfectly level district; and if the land has been long used to these open ditches, he must act cautiously in filling them up; if, however, there be sufficient fall to get rid of the water, then we say, by all means fill them up at once.

J. ROBSON.

SEA WORMS.

AMONG the many odd things that I am particular to keep, as objects of interest, there are few more interesting than large oyster and whelk shells, that have been cased over by Serpulae and Barnacles; they are the most picturesque of any of the gatherings from the deep sea, and when the creatures that inhabit the calcareous tubes and galleries, with which

they are covered, have gone the way of all flesh, the old shells remain as objects worthy of a place in a student's cabinet. Among the uses to which they may be put, I may mention the construction of rockwork for marine tanks, in which they look natural and elegant, owing to their rugged outlines and quiet colours; and, as they are very light, they do well with branching coral for a vessel that, at any time, may require to be moved, without the necessity of unstocking it. The creatures that inhabit these tubes belong to the familiar family of Annelids, of which the common earthworm may be regarded as the type. A very large number of these marine worms find their way into our marine vessels, and their exquisite beauty and distinctiveness render them welcome inmates. Some, indeed, come there by accident, for specimens of *Nereis* and *Syllis*, which closely resemble the common millepede of the garden, frequently crawl out of shells containing hermit crabs, and, finding their way down among the pebbles, keep up a writhing action on the bottom, and generally live for two or three months—though you may not happen to see them for weeks after having introduced the hermits. Frequently the presence of a *Nereis* in a whelk shell is made known at feeding time, when a mysterious worm-like head pops out from behind the crab, and snatches the choice morsel from his mouth, and then instantly withdraws to masticate the stolen dainty in secret. At other times specimens of the family are found completely covering an old shell which you may have received with an *Actinia*, or with a tuft of *Algæ*, but these are the masons of the family which construct cavernous recesses on the surfaces of shells and stones, giving a rough appearance to them, similar to the gouty knobs on the branches of old apple trees in wet ground.

It is well to examine with a lens the rough shells and stones in the tank, especially if the latter are soft sandstone, to discover if they are not studded with little feathery fans all over the surface; as you will, probably, find yourself the possessor of dozens of pretty creatures which have come to you accidentally and gratis, for these creatures abound not only on objects dredged from deep water, but on ordinary shoal gatherings. I find immense numbers of *Sabellæ* and *Terebellæ* on half-rotten fragments of sandstone that come to me from the south coast, well covered with *Ulva latissima*, and which, owing to its rapid decay in the tank, the red fragments continually crumbling from it, would be a perfect nuisance, were it not honeycombed with myriads of the beautiful worms which afford one much amusement in the use of a lens.

All these worms are formed on the principle of a centipede, that is, the body is composed of successive rings, or annular joints, so that they are enabled to contract and expand, lengthwise, at pleasure. The first joint is the head, to which is appended the branchial frills, the protrusion of which gives such attractiveness to the shells on which the colonies have established themselves. The other joints are usually furnished with feet-like processes, that enable the animal to creep forward to the mouth of its tube, or retreat back again when alarmed in the *Dorsibranchiata*, of which the *Nereis* is an example; the gill tufts are associated with these bristles; but in the *Tubicola*, represented by the *Serpulæ*, they are attached to the head.

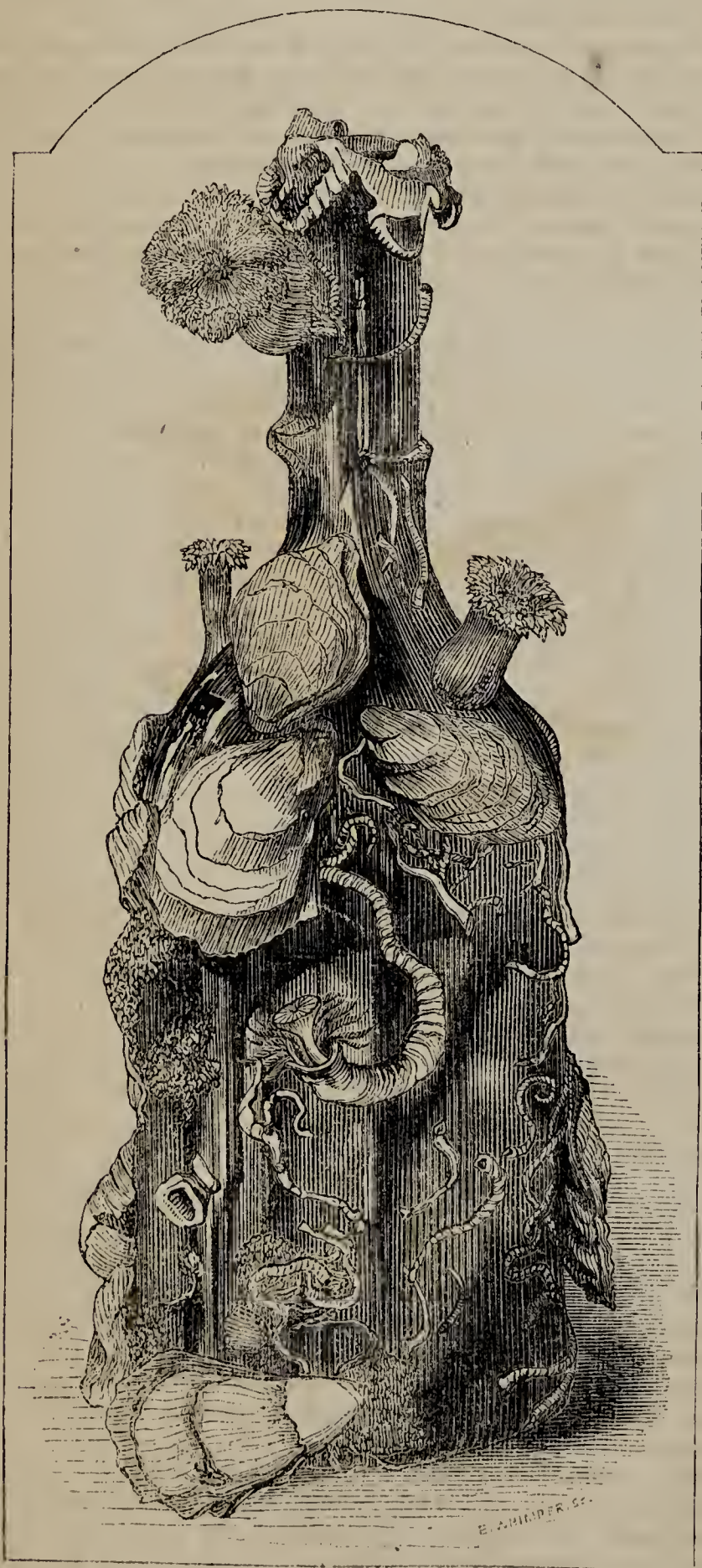
The most popular members of the family of marine Annelids are *Serpulæ*, of several species, *Terebellæ*, *Sabellæ*, and the famous Sea Mouse, *Aphrodita aculeata*, which is so interesting and beautiful a creature, that we must give it special consideration hereafter. The *Sabella alveolata* is, decidedly, a sand worm; it constructs a congeries of sandy tubes, which so regularly cross and interlace, as to prove a very perfect honeycomb; and it prefers a flat surface for its operations, and lives in colonies of thousands of individuals. Some of the caves that are accessible on the coast, when the spring tides are out, may be found entirely mined over by this industrious creature, and if a block of the loose material is placed in the tank, it will be seen to be regularly dotted all over by their expanded gills, resembling, at first sight, a prolific birth of young gemmaceous Anemones. *Terebella conchilago* likes a harder material, and usually builds his tube of minute pebbles, grains of sand, and small shells, which he cements together in just the same way as the Caddis worm. These tubes are very brittle, and are pretty sure to undergo some amount of damage in collecting them; but, unless the creature within also suffers

injury, the damage is soon repaired. Between these two animals, the differences of habit and structure are sufficiently striking to enable the most inexperienced observer to distinguish them. The *Sabellæ*, like the *Serpulæ*, display a pretty comb of gills; but the *Terebellæ* carry an *Actinia*-sort of head, adorned with slender tentacles, wreathed, as it were, with snakes. It is also locomotive, and will sometimes leave its tube and mount the glass by means of its tentacula, and sometimes it will travel along the surface of the water with its body in a vertical position, the tentacles holding to the stratum of air at the surface, on the plan of walking on a ceiling. But *Serpulæ* are the most attractive, and for beauty of form and colour, are not to be put in the shade by the most beautiful of the sea flowers. If you watch, after having allowed a specimen some little repose, you will see it thrust forth a pair of bright coral fans, right and left, and between these is an elegantly-formed trumpet of the same dazzling coral hue. The species is *Serpula contortuplicata*; it is very abundant, and, hence, easily procurable, and with very moderate care proves hardy and long-lived. The way in which this *Serpula* usually constructs its stony tube, is to lay it close to the stone or shell to which it is attached, the greater part of its length, and then to turn it upwards, so that the last few rings are elevated perpendicularly. On examining a bunch of these tubes, and they are generally involved in curious twistings, many together, the successful additions may generally be counted from the narrow beginning to the last expanded annulus, from which the creature displays its lovely fans and stopper, in the same way as we can count the lines of growth on the shell of a mollusk, and especially in the shell of the oyster. The pretty fans are the breathing organs, and, under a lens, their construction is seen to be on the plan of a series of combs, and it is an easy matter to detect their relationship to the branchial appendages of other aquatic creatures. The casual observer will easily learn the use of the neatly-formed trumpet, for the mere passage of the hand before the glass, or above the surface of the water, is sufficient to alarm the newly-caught *Serpula*, who, in an instant, closes up his fans, and withdraws into the tube, to which the trumpet acts as a stopper. On close examination, another trumpet will be discovered, associated with the one which plays this conspicuous part in the animal's movements, but it is undeveloped, and minute, the visible one serving the purpose to which it is put, and fitting closely inside the mouth of the tube. Whatever may be said about taming creatures which seem so destitute of intelligence, as sea worms, the *Serpulæ* certainly change their habits somewhat in confinement, and instead of withdrawing on the slightest alarm, even of a footfall, or the passing of a shadow over the vessel, get at last quite bold, and remain expanded, in spite of small disturbances. At first it is quite impossible to examine them minutely, owing to their timidity; but after a while, they will give the student every opportunity for applying a lens to them, and there are few subjects more worthy of a close scrutiny.

In common with other tube worms, and with hermit crabs, the *Serpula* usually leaves his home to die. A sudden alarm, or a long-continued foulness of the water, will sometimes cause him to throw off the trumpet; but this act is not always followed by immediate death. I have had specimens that lived a fortnight after the stopper had been ejected, but I have never either heard of, nor seen, an instance in which the organ had been reproduced. If the rejected stopper is removed from the tank, it is found to be rigid and horny, and it retains its form and colour for weeks after dismemberment, showing that there is little decomposable material mixed up with its cartilage. When the worm comes out and concludes its career, its relations to the Annelids is easily detected, the long worm-like body is formed of a series of rings, and it terminates in a blunt point, slightly curved. Mr. Sowerby very lucidly describes the organs by means of which the animal traverses the tube, and if an examination be made immediately after death, these may be distinguished and counted, so as to furnish a pretty zoological study. He says, "How does the *Serpula* manage to creep up and down his shelly tube so rapidly, withdrawing so instantaneously when alarmed or disturbed? Along the sides of his body are seven pairs of tubercles, with a bunch of bristles in each, which may be pushed out or withdrawn. Each bristle, when microscopi-

cally examined, is seen to be a transparent, horny, yellow shaft, the extremity of which dilates into a slightly enlarged knob. This is cleft into four points, three of which are minute, but the fourth is developed into a long, slightly divergent, highly elastic, tapering, and finely-pointed spear. By pushing these bristles against the sides of the tube, and prizing up the body by their means, the upward movement is effected. The retreating motion is performed by a minute, ribbon-like musele, on which are fixed many thousands of hooked teeth, which firmly hold to the inner lining of the tube, while the muscles contract with a jerk, and draw the animal down."*

The *Serpulæ* may be kept with any kind of marine stock, for they have no bad habits, and they are not liable to injury, even when crabs sprawl over them, owing to the impenetrable retreats in which they so readily enshrine themselves when alarmed. I have had them survive a week caused by putrescence, and increase of density; but, as a rule, the water should be bright and pure, and well regulated as to strength, and abundantly supplied with oxygen, for them to do well.



The subject chosen to illustrate this paper is a bottle, dredged up last autumn at Weymouth, and which I count

* "Popular History of the Aquarium," p. 183.

among my marine curiosities. It is a quart ale bottle, and may be a memorial of a wreck, or of some jolly yachting party. Its history previous to submersion *might* be curious, if we knew it; its history since is written on it with unmistakable plainness. Like the pieces of brick, pottery, and the ancient oyster shells, that the dredge brings up in such numbers, this bottle has been plentifully adorned by marine masons which, for more than four years past, have indulged uninterrupted their architectural caprices on its surface. It came to London with its entire stock in a healthy state, and when placed in a tank, several *Actinæ* took up their quarters on it, so that for many months it was a most beautiful as well as a curious object. The lovely *Dianthus* is seen attached near the mouth of the bottle; there is another of the same species on the right-hand side, and on the left a *Daisy*, rearing himself as high as possible. When sketched, it was tenanted by oysters of all ages, from a few months to at least four years. *Serpula contortuplicata* had found it a suitable nidus for many sets of tubes, and in the centre of the bottle a fine specimen is represented in full expansion. The smaller tubes are those of *Serpula triquetra*, which in some places are associated with the little volcano-like structures of the *Balanæ*, or Acorn Barnacles. The mouth of the bottle is thickly encrusted with the three-sided tubes of small *Serpula*, one tube laid on another most confusedly, and with what was a pretty progeny of juvenile oysters. A similar lot of young oysters were also attached to the hollow space, under the base of the bottle. The number of creatures inhabiting it, when it was dredged up, could not have been much less than a thousand.—S. H.

PEACH-GROWING IN LANCASHIRE.

IN a recent number of THE COTTAGE GARDENER, Mr. Robson alludes to the healthy appearance of the Peach walls at Knowsley, and conjectures there must be something peculiar in the soil to cause such fertility and exuberance. I am not in a position to say whether it is the atmosphere, or soil, which causes the Peach to luxuriate so well in this northern district; finer walls of Peaches it has never been my lot to see than in Lancashire, and one in particular, at Allerton, the seat of Hardman Earle, Esq.; the wall could not be much lower than twenty feet—not a square foot of brick could be seen—all was covered with healthy green foliage, and a most abundant crop of fine fruit. While shrubs suffer fearfully from the effects of sea breezes, the Peach appears at home; and does far better here out-doors than in the neighbourhood of London. I remember when living foreman at Wrotham Park, ten miles north of the city, Mr. Thomson (now at Dalkeith), who is one of the "scientific practicals" of the day, tried all means to grow the Peach out-doors, but with little success; the trees would make a slight attempt to grow for a season or two, if favourable; then gradually die, and no human efforts could save them. One cause why the Peach thrives so well here is, we have in general finer and drier autumns than in the South; this enables the Peach to ripen its wood thoroughly, and stand the rigour of the severest winter, without the wood assuming that blotched-like appearance, which it always does, if not well ripened; otherwise, it shrivels up and dies, owing to the action of frost upon it. Perhaps, some of the Lancashire Peach growers will give us their opinion, and enlighten us on the subject.—JOHN EDLINGTON, *Winch House, Seacombe, Cheshire*.

EARTHEN PIPES INSTEAD OF A BRICK FLUE.

IN your number of the 13th inst. a correspondent, "X. X." is inquiring about pipes for flues. About a year and a half ago I built a span-roofed house, twenty-two feet and a half by fourteen feet and a half, glass end to the south-east, and four feet glass in front. At first it was intended to heat it with a pipe flue, as recommended by Mr. Fish, with about six feet of brick flue nearest the fire; the bricklayer overpersuaded me not to have the brick flue, as he was sure the pipes would stand; so it was fitted up with unglazed nine-inch pipes down the front, across the end, and along the back: however, before the winter was half over, the two first

pipes broke, from the damper being in too far. I then tried, as stronger for the front, the nine-inch glazed pipes made by J. Cliff, of Wortley, near Leeds; but the first heat was still too much for these, for the first pipe very soon went; so last summer I had them taken out, and a brick flue built, two bricks-on-edge, standing on a twelve-inch pavement, raised three inches from the floor, and covered with another pavement. And, as several of the unglazed pipes were cracked, I put the glazed ones across the end; and shall, most likely, do the same down the back this summer, as two or three of the unglazed ones there are cracked. I should say, that my furnace bars are three feet ten inches below the floor, so there is a very strong draught; the pipes at the end are often so hot, that the hand cannot be kept on them for even half a minute. I find fine clay and hair better than anything else for making the joints with. I keep the air damp, by standing flat tins with water on the flue and pipes. With these pipe flues, I have kept the house at a minimum temperature of 45°, for a short time at first, or until plants began to grow; then 50° was my minimum. Since the 1st of January, with very little trouble up to this time, I only had fires just to keep out the frost; or, on a fine day, to drive out the damp.

A gardener near me uses nothing else but pipes in his greenhouses, but a brick flue in his foreing-house.—W. O. D.

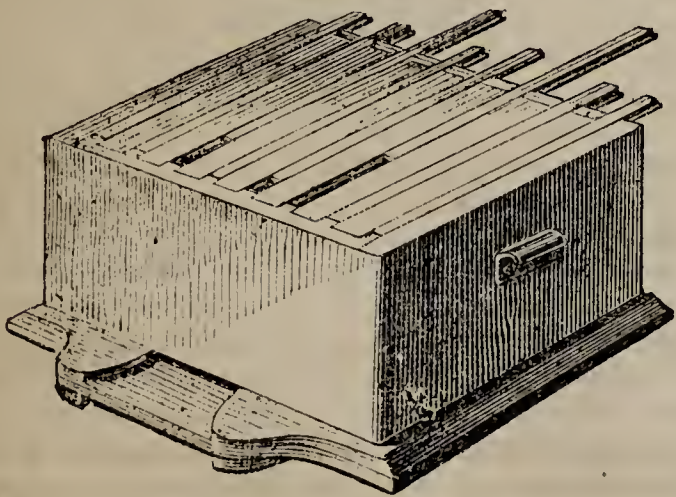
THE BAR AND SLIDE HIVE.

HAVING had several applications from the readers of THE COTTAGE GARDENER for particulars respecting this hive, I am induced to think that a short description of it may not be wholly without interest to those who are bee-keepers.

The hive is the result of some years patient investigation into the most profitable mode of keeping bees, in large numbers. During this inquiry I have performed a vast number of experiments, having constructed hives of different materials, in order to test their working capabilities. I have tried tubs or pails, measures of curved wood, coils of gutta percha, rings of bark, hives of earthenware, &c., but, with the system of management I adopt, I have found that these substances were all, more or less, open to objection; and I returned to the square-shaped storifying box, formed of inch-deal.

My reason for preferring the square to the octagonal, or hexagonal, form is, that the moveable bars, to which the combs are attached, are able to be shifted to any place in any box. Whereas, if an octagonal box is made with moveable bars, it is obvious that this advantage is entirely lost.

The hive consists of two or more storifying boxes, each furnished with seven loose bars, to which the combs are attached. These are kept in their places by eight slides, which, when in position, render the loose bars perfect fixtures, so that the box may be inverted without the bars or slides shifting their position. Their arrangement is shown in the accompanying engraving, which represents a single box with its floor-board; the entrance being cut out of the latter.



It is needless to insist upon the advantage of loose bars, if they are constructed of the proper width, as fixed by Mr. Golding, viz., one inch and one-eighth; they place every comb at the perfect disposal of the bee-master, either for the removal of honey, for the purpose of forming artificial swarms, or cutting off royal cells to prevent swarming, &c.

The slides (which, I have no hesitation to say, I adopted for the first time last season, copying them from the Stewarton

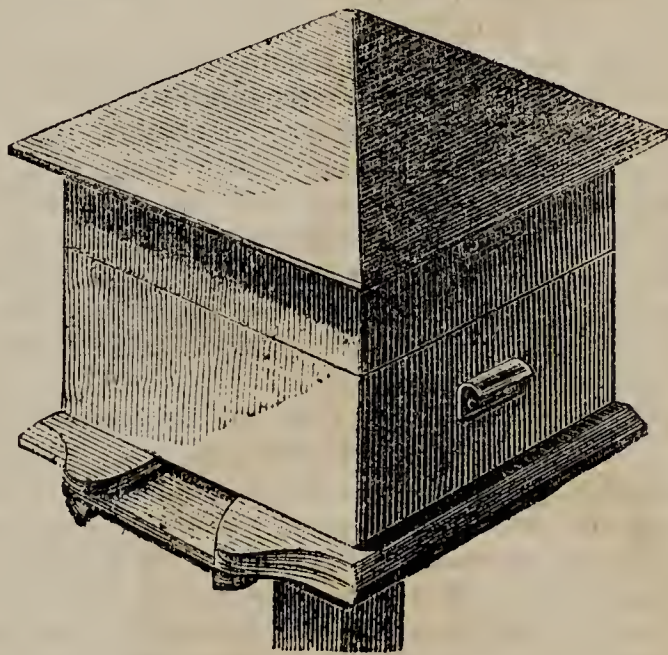
boxes, so excellently and cheaply manufactured by Mr. Eaglesham) are a vast improvement over the original plan of putting a cover on a bar hive, as they permit any single bar of comb to be extracted, without disturbing the others, and give every facility for storifying, and enable the removal of full honey boxes to be very safely performed.

The plan of working these boxes is very similar to that which is adopted with the Stewarton's, viz., a very strong swarm, or two weak ones, are placed in two boxes, and when these are well filled, as seen on looking through the windows behind, a honey box or glass is placed over, and communication made by withdrawing the slides. If a small swarm is placed in a hive, of course, no extra store is to be depended on the first season.

One great advantage of the loose-bar system is, that in a large bee garden, such as that of which I am joint proprietor, not a single cell of brood is ever destroyed, for on taking up the hives in the autumn, all the bars that contain any brood are put into empty boxes, and these are placed over the remaining hives, to be hatched out. Thus a vast number of late-hatched young bees are preserved, that live through the winter, and are invaluable in spring.

Again, artificial swarming is, with these boxes, extremely easy, nothing more being required than to take out the centre brood comb from a populous hive, in May, and place in an empty box, which is put in the situation of the old stock, that is removed to a new situation a few yards distant.

It may be, perhaps, desirable to state, that the boxes are eleven inches and three quarters square, inside measure, and of two sizes as to depth, viz., seven inches and five inches. The second engraving shows a hive consisting of a box of each size,



with a wooden shade, which I find is most conveniently and cheaply made, by dowselling together two nine-inch deals, so as to form a piece of eighteen inches square; this readily protects the hive from rain and sun; and if it is made of deals that are two inches thick, and chamfered off from the centre, as shown in the cut, it forms an appropriately shaped finish; which is superior to metal, as it is warmer in winter, and shades off the intense heat in summer.—W. B. TEGETMEIER, Muswell Hill, N.

FLORISTS' FLOWERS.

THE ACHIMENES.

THERE is no doubt these have become florists' flowers, for the sports from seeds are now so numerous, that a botanist would be quite in despair, had he to give specific distinctions to every variety now produced. In the *Cottage Gardeners' Dictionary* there are enumerated about thirty species, more than half of which are garden varieties. Such kinds as the *Achimenes atrosanguinea*, *A. cupreata*, *A. gloxiniaeflora*, *A. grandiflora*, *A. longiflora*, *A. multiflora*, *A. pedunculata*, *A. picta*, *A. pyropæa*, and *A. Skinneri*, are, perhaps, true species, but even these, I fear, would sport from seed, and hybridise with each other. Such being the case, I may, without any disparagement to botanical lore, claim this genus for the florist to exercise his skill upon. Each variety, like all true hybrids, may be continued true by propagation,

either by cuttings or division of the scaly roots, or by the small incipient tubers that are produced on many varieties, in the axils of the leaves. Having obtained the grant from botanists to consider this genus as belonging to the more humble florist, we must give rules to guide us in judging which are the best, or, in other words, determine the characteristics of a good *Achimenes*.

1st. *Form*.—Each bloom should be perfectly circular, without any serratures on the edges. It should be flat and firm, so as to bear carriage. It should by no means reflex.

2nd. *Colour*.—This should be clear and distinct, and perfectly pure. If the variety is striped or spotted, such stripes or spots should be clearly defined, and placed at equal distances, in order not to produce any confusion.

3rd. *Habit*.—The plant should be moderate in height, and stout enough to bear the flowers without sticks. The foliage medium in size, and the blooms should be numerous, but not crowded on the stems.

Culture.—On this point I fear many florists would fail, not from want of skill, but from not having the means to grow them. Yet, let them not despair. The frames they use to shelter through the winter such plants as Auriculas, Carnations, Verbenas, &c., may be made use of after such flowers are placed out of doors. A very gentle hotbed will start them into growth, and the heat of summer will, in such frames, be quite sufficient to bloom the *Achimenes* in through August and September. The best pans of *Achimenes* that I ever grew were brought to perfection in a cold pit, without any artificial heat whatever. If the amateur has a greenhouse, he will find no difficulty in growing them.

The first thing to do is to procure some pots of tubers from the nurseryman, and keep them from starting till the frame or pit is at liberty. Then make up a compost of turfy loam, leaf mould, and sandy peat, in equal parts, adding sufficient silver or even river sand, to give it a decided sandy character. Then procure some shallow pans, rather deeper than the ordinary seed-pan, drain them well, and fill them with the compost, using the rougher parts for the bottom of the pan next the drainage. Then plant the tubers, laying them lengthwise on the soil, and cover them about one inch deep. Let every tuber have two inches square to grow in. Some plant them much thicker, and others much thinner, but the medium is the best.

When all are planted, place them in the frame for three or four days, without giving any water, and then only give a gentle sprinkling. As soon as the shoots appear, water more freely, and increase the quantity as the plants progress. During sunshine shade slightly, and give air by tilting up the lights behind. When the plants are coming into bloom they require abundance of water, and frequent sprinkling overhead. The *longiflora* varieties have large heavy flowers, and when full of flower will require support. Very slender green sticks should be used, and so placed as to appear like natural stems. By persevering in these operations, the plants will bloom quite as well as they do in the best stoves. The bloom may be prolonged by giving a little thicker shade, when the first flowers expand. Bright sunshine will turn the edges of the leaves brown, and destroy the bright colours of the blooms, especially the blue varieties. In long-continued rainy weather, the damp will be found injurious to the foliage. In frames and pits, the only remedy is abundance of air during the day; and if the surface inside, on which the pans stand, can be covered every now and then with dry coal ashes, they will absorb the moisture. In such weather, give less water at the root, and none on the leaves.

When the blooming season is past, remove the plants out of the frame, and place them at the foot of a wall facing the south. Let them have the full benefit of the sun, and contrive some way to keep off heavy rains. By such treatment the tops will gradually decay, and the tubers ripen. Before frost arrives, remove them into a room where no frost can reach them, cut off the decayed tops, and here they may remain till the growing season returns.

The following are selected as being worthy of general cultivation.

NEW VARIETIES.

Meteor (Parsons), bright scarlet, well formed, and brilliant in colour; habit good, being dwarf and free in growth. 10s. 6d. each.

Rosea magnifica, rosy purple, well formed, and large, the eye spotted with yellow. 5s. each.

TEN OLDER VARIETIES.

Amboise Verschaffelti, white with dark starry centre; a striking variety.

Carminata splendens, brilliant carmine; good habit.

Eckhautii, bright rosy red, marked with spots in rows; handsome foliage of a silvery hue.

Longiflora major, large blue.

Longiflora alba, white.

Leopard, red spots on an orange ground; beautifully distinct.

Madame Hagenauer, large, purplish violet; fine form.

Parsonii, shaded crimson; fine form, and very large.

Piccolomini, red, distinctly spotted with maroon; large and fine.

Sir Treherne Thomas, a rich crimson self; fine form and large flowers; abundant bloomer. 1s. 6d. to 2s. 6d. each.—T. APPLEBY.

THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.

By P. V. M. F.

(Continued from page 46.)

OF THE QUEEN, OR MOTHER-BEE.—Every bee-keeper ought to know, that there is one mother-bee in each hive, and *only one*, who is commonly called the *queen-bee*. She is the parent of all the bees in the hive. While she is strong and young, she lays plenty of eggs, and everything goes on well in the hive; but if she dies or gets worn out, then of course no eggs are laid, and the number of bees diminishes every day, till all are dead. If the bees could obtain a new queen, before their numbers have become too small, they would grow busy again, and the hive might be saved. But it is *very seldom* that bees can get a new queen in March or April. You may easily know a queen, if you see her. I have often caught some of my queens, and could tell a queen among ten thousand common bees, if only I could set eyes on her. She is much longer than the other bees, nearly twice as long. She has short wings, and a reddish-brown body with long legs. It is said, and I believe it, that a good queen-bee will lay a *hundred thousand eggs* in one season! You may guess, therefore, how many swarms we should have every year, if it were not for the many enemies and accidents to which bees are exposed. She lays *most* eggs in April and May, a *great many* in March, June, and July, and *some* in February, August, September, and October. In the remaining three months, November, December, and January, there is not much going on in any hive, at least in England.

OF THE DRONE, OR MALE-BEE.—One of the best and surest of good signs, is the *early hatching of drones in strong hives*. The drone is the male-bee: there are often as many as two thousand of them in a good stock or hive. THEY HAVE NO STING. They do nothing else but fly about in fine weather, fill their bellies with good honey, and enjoy themselves. Their life, while it lasts, is a life of pleasure. But it is a pleasure dearly bought, as most earthly pleasures are, for the bees soon get tired of them, and kill them, when they find they are of no use. This murder of the drones generally takes place in July and August. But although drones are an idle folk, and one has little pity on them, when their life *closes*; there is no greater pleasure to the bee-master than to see this life *begin*. An old bee-keeper used always to feast his friends as soon as he had seen his first drone every spring. I have seen drones in very strong hives as early as the 9th of April, but they are not often seen in any quantity till May, and sometimes, in late springs, or weak hives, not till June. You may tell the drone at once, if you stand for a few minutes near a strong hive, about noon on a fine day. They make more noise than a dozen common bees, but there's nothing in it: and they are very large and stout, and blacker than the common bee.

SECTION 3.—SUMMER MANAGEMENT OF BEES.

OF SWARMING.—“*Early drones, early swarms*,” that is why old Bonner so rejoiced at the first sight of his drones.

As soon as you see drones, look out for swarms. When drones appear, there ought to be some one always on the watch, or you may chance to lose the swarms when they rise: they have often a bad habit of straying, and when once they are off, they are very seldom found again. Swarms leave the hive sometime between nine in the morning and four o'clock in the afternoon. *Everything should be ready, so as to hive them at a moment's notice; and they ought to be hived as soon as possible after they have settled.*

OF ARTIFICIAL SWARMS.—Among the disadvantages of the Cottage method of Bee-Management are the following:—1st. The uncertainty of swarms. 2ndly. The danger of losing them when they do come. 3rdly. The waste of time and patience in watching for them. It has been computed that a vast proportion of swarms are lost to their owners every year, while bad weather, at an inopportune moment, prevents a great many hives from swarming at all. All these disadvantages, however, would be done away with, could we *make* the bees swarm at a convenient time. Can this be done? I answer, *yes*; for it is now always my own practice, so that a natural swarm is a rare occurrence in my own apiary. At the same time, among the many different ways of making *artificial swarms* (as they are called), I know of none so simple as to be recommended for universal adoption. Old Bonner says truly, "To make artificial swarms . . . always has been and ever will be destructive to bees, if performed by *unskilful* persons;" so that he adds, "all new beginners may be almost certain of ruining some hives in their attempts." This is true, but he also affirms, that "it is *very profitable* when performed by *skilful* bee-masters." And this latter statement I know from experience to be as true as the former. Having, therefore, duly cautioned the reader, I shall proceed to point out what I have found the *simplest* and *surest* method of creating swarms.

To succeed in making artificial swarms, attention must be paid to the proper *time*, as well as to the proper *manner*, of conducting the operation. The following rules for knowing the proper time must be carefully observed:—

- 1st. The hives must be strong and full of bees.
- 2nd. There must be a good number of *drones* in them.
- 3rd. There should also be several *young queens* coming on, and nearly ready to leave their cells.
- 4th. There ought to be plenty of *young common bees* *ceiled up in their cells*.
- 5th. The *weather* for performing the operation should be cool and fine, without wind.
- 6th. The best *day* to choose, if all other things are favourable, is the first day after a period of cool or rainy weather in May or June, when the weather changes, for this is the time when the bees may be expected to swarm naturally; and it is well to follow Nature as closely as possible.
- 7th. The best *hour* of the day is soon after sunrise, when the bees are mostly at home and quiet.

But, it may be asked, how is one to know whether there are young queens, and young common bees, coming on and ceiled over in the hives? The only way to find this out, is by *driving* the bees into an empty hive on a cool morning, and then examining the interior of the hive. (See page 28.) In driving shake the hive as little as possible, for fear of breaking the combs, as they ought to be very heavy with young bees at this time. The empty hive with the driven bees in it must be put in the place of the old hive, which should be examined some distance off. If you see plenty of *covered* cells in most of the combs in the middle and lower part of the hive, this shows there are plenty of young common bees; and if you see some small *pear-shaped* cells hanging down along the edges of the combs, and *closed in*, these are royal cells, containing young queens more or less ready to come out. These are the two surest and best signs of the fit time being come for making artificial swarms. I must mention, that before these cells contain young queens, or queens of a proper age, they are open and look like empty Acorn-cups; but when the young queens are *sufficiently forward*, they are elongated and closed in so as to resemble Acorns in their cups, or Pears with the pointed end downwards. The more of these you see the better, but if you see *two* of them, you may proceed to make your swarm without fear. This is simply to let the bees remain in the hive, into which you had driven them, taking care to let them stand in the place of the old hive; this latter, of course, must be moved to some other part of the garden.

If, however, you do not see any royal cells, or but few of the common bees' cells *covered in*, you must put the bees back again, and set the old hive in its place once more. To return the bees is a simple affair. It is enough to turn the empty hive bottom upwards for a few minutes, with the old hive over it. A tap or two with the hands will make them go up more quickly than they did before. Or else you may set the old hive in its place first, and put the bees in the empty hive on the top of it. They will soon go down through the hole in the top of the old hive, which, of course, must be open for the purpose.

In making a swarm in this manner, you must be sure that the queen is with the driven bees. You may be sure of this, if the bees are pretty quiet, and especially if they congregate together at the top of the empty hive. If she is *not* with them (which you may also know by the bees refusing to remain quietly in the hive) you must put the old hive in its place again, and try to make your swarm some other day.

There are various other ways of forcing swarms, which I find successful enough myself, but as they are difficult operations, and not so *sure* as the one I have just given, I pass them by without notice here.

(To be continued.)

INFORMATION WORTH NOTICE.

G. CLEMENTS, merchant, Manchester; T. Lake, Hulme, near Manchester; and M. Thomas, Salford, have favoured Mr. Chadwin, and others, with orders, which they declined to execute. The orders were written upon invoices with printed heads!

QUERIES AND ANSWERS.

HYBRIDISING GERANIUMS.

"The Doctor, my most worthy friend, is with me at this moment to request that I will ask you, for him, a whole host of questions; and after all he ends by saying—'If I could only have half an hour's chat with Mr. Baton (*Anglice*, Beaton) I'd get more value out of him than by twenty letters.' The fact of it is, 'the Doctor' is going cracked about cross-breeding, hybridising, and twenty other queer things, which he owns D. Beaton knows more about than any other man on this side of the Styx, and he would give anything to have a chat with him, and if the Fates spare both himself and D. B., till the end of the summer, nothing but a severe fit of the gout will prevent him from going over to England, where he has not set his foot these twenty years. Well, then, his first question is, relative to the size of the glass he intends putting in a small house he is about to erect; it is to be strong sheet-glass, laid on the rafters, the house itself being a span-roof, forming a right angle at the top. He wants to know what is the extreme breadth he can *trust* between rafters? Though he has not told me so, I imagine his new house is to be devoted to hybridising; for the next question is, 'I should like to know what species Mr. Baton would take in hand among Geraniums, supposing he could pick and choose at the Cape of Good Hope!' 'Baton is right,' says he, 'about the florists; bad luck to them! (a neighbouring rival doctor is a great florist, and prides himself in having 100 different kinds of Carnations, and Picotees, which may, perhaps, in a measure account for my friend's aversion to florists in general) they have been breeding round and round, and they never will get a peg further, and we must begin afresh if we want to see anything new. If I had plenty of time to spare, I'd find out myself which would be the kinds to operate on; but I am getting old, and I should like to get a hint, were it only to save time, and a few blunders.' Would our friend, D. Beaton, help my worthy Celtic Esculapius, by just recommending those wild species which would be most likely to yield useful results? At my suggestion, he intends working the native Geranium *Robertianum* and *Molile*, with some of the wild Cape Pelargoniums; as also the beautiful *P. tricolor*; which, pray, tell me where I can get it for him, as I do not see it in any catalogue. The Experimental shall have the full benefit of any hit my friend makes, should he be successful, and nothing shall be given to the world without first undergoing

the searching ordeal of 'The Experimental.' I enclose you a good sized frond of *Ceterach*, growing at present most luxuriantly in my greenhouse, and which I brought, last autumn, from Mote Park, the beautiful residence of Lord Crofton, where it grows in the greatest quantities all over the demesne wall. Large as it is, it is but a *weed* compared to the one I wrote to you about a fortnight since, but the strange part of it is, that on my side of the Shannon, *Ceterach* is *very rare*, and when found extremely small. (I enclose you an average specimen.) At Mote Park, on the opposite shore of this magnificent stream, it is most abundant, and yet I find, close to my cottage, a gigantic specimen, much larger than any I ever saw before, and that in a spot where a Fern was never known to grow!

"I should feel much obliged for the names of a few handsome, showy, and otherwise desirable bulbous plants—it is a tribe I greatly admire. What do you think of *Anthocercis elegans*? It has been recommended to me as very beautiful."—ITALICUS.

[Tell the Doctor he must give up all idea of superfoetation, and must believe in the impracticability of bigeneric intercourse, as the right foundation of hybridising. Nevertheless, he need not believe that all botanical genera are naturally so. The Geraniums and Pelargoniums will not unite, however, in any of their sections. We have tried all the European and Asiatic species on the African race, both ways, and will give the Doctor the "apple" of our eye for the first cross he will bloom between the two families. Mr. Rivers being the most practical man in our line, the Doctor can do no better than take the size of glass which Mr. Rivers uses for his orchard houses. The Doctor could not take his dislike to a "fancy," owing to the boasting of a crack-brained neighbour; but from the fact, that all the rules of all florists are inimical to a good system of flower-beds, of which the worthy Doctor is so fond; the Doctor's bed will be the softest bed in England this season.

The greatest chance, that we know of, for a real hybridiser to make a name and a fortune, lies in that confused mass of subjects which go under the general name of Hibiscus. A hit or two might be made yet in the Geranium tribe, but nothing worthy of a great man's ambition. We have not seen *Anthocercis elegans*, but not one of the old species of it is worth much. The best bulbous plants of the present day, are Suchet's hybrid Gladioluses, the best of the Natalense breed. Suchet is gardener to Napoleon III., at Fontainebleau, but the Doctor ought to have had the best of that race. The *Gladiolus Gandavensis* was raised at Sydney, in Australia, and "let out" in Ghent; but it is wrong to say that Ghent or Dutch Gladioluses are half so good as our English crosses; but ours are now superseded by the indefatigable Suchet. There is nothing new in any other department of hardy bulbs. There are about thirty distinct kinds of Crocuses which have not yet been grown as garden plants, and a vast number of Narcessean bulbs, all of which are good subjects for the Doctor's skill at crossing; but they must be sought for in botanic gardens, as there is no sale for such things. Every lake and river side in Ireland might shine in every tint of flower, from deep crimson to pure white, out of one genus alone, that of *Crimum*. The *Amaryllis longifolia*, of the Cape bulb collections, will "breed like a fish," with all the hardy and hardier *Crimums* in the east part of the Cape colony. But where is the Doctor who will take the trouble?]

AN AVENUE OF MAGNOLIA GRANDIFLORA.

"In this county (South Hants) the *Magnolia grandiflora* flourishes as a standard, and, independently of its magnificent and fine-scented flowers, has a foliage through the winter unsurpassed by any evergreen whatever. I have a great ambition to make an avenue of these beautiful trees; but as they are very slow growers, I should like to graft upon tall stocks. Can you, or any of your subscribers, assist me by telling me in what manner, and at what season, I should set about this? and upon what stocks I can graft my shoots? As I am quite certain my gardener will 'Pooh pooh' me, if I venture to make the suggestion, without being backed by your authority, I have taken the liberty, as a very old and faithful subscriber to your journal, of asking for your aid in my difficulty."—M. P.

[The simplest way, and by far the cheapest and easiest,

would be to inarch the *Magnolia grandiflora* at a height of ten to fifteen feet from the ground; but, unless you have the stocks growing on the place already, your idea can hardly be carried out. You can only graft, or inarch, a *Magnolia grandiflora* on some other *Magnolia* of the same evergreen section; although the *grandiflora* would "take" on a deciduous *Magnolia*, we question if large trees of it could be had on deciduous stocks; but, if they could, the Tulip tree (*Liriodendron tulipifera*) would be the cheapest stock for *Magnolia grandiflora*. Therefore, as grafting tall trees, or old trees, with *grandiflora* is much more difficult than inarching, choose the latter; but do not entertain the idea that, by grafting *Magnolia* on any other kind of tree, in a young state, it would grow faster than on its own roots. The probability is, that it will not grow quite so fast on any other kind of *Magnolia*; and after them there is only the Tulip tree to choose.]

VERBENA VENOSA SEEDLINGS — HORSESHOE-LEAVED GERANIUMS—ZAMMARA.

"Will you be so kind as to state, whether the *Verbena venosa* will flower this year from seed which was sown in February, and the seedlings now nice young plants? If so, will it do to be put in a bed between scarlet Geraniums and a yellow *Caleolaria*? There are five beds, the centre scarlet Geranium, blue on each side, flanked with yellow. It is a shell pattern."—ANXIOUS.

[Some of the seedlings of *Verbena venosa* will flower this summer, but they will be too late to give any effect in a bed with Geraniums. Recollect, this *Verbena* must not be planted with any of the bedding Geraniums, scarlets or not scarlets, unless the leaves of such Geraniums are variegated, like those of *Flower of the Day*; and, last of all, the *Verbena venosa* does no good this way, unless it is planted with the oldest variegated Geranium in England—the *Horseshoe variegated* of Linnaeus, in his "Hortus Upsalensis" (foliis cordato-orbiculatis incisus zona notatis). The original name of the horseshoe-leaf mark was the *Lady's-Mantle leaf*; and if we suppose the leaf turned stalk end upwards, and big enough to cover the shoulders, what an elegant pattern it would make for a Spanish cloak, or mantle! One of the finest marked of the Horseshoe, or Lady's Mantle, is called *Zammara*, and is an advance on *Lucida* towards the Nosegay section of Geraniums. It was introduced to the neighbourhood of Kingston and Hampton Court, from Spain, by a family of refugees. In the mountainous parts of Spain the common people wear sheepskin mantles, the Spanish name of which is *Zammara*, and after which this Geranium is named. Therefore, our Horseshoe-leaf, Lady's Mantle, and *Zammara*, are three different names, signifying the same thing. Just reverse a "Horseshoe-leaf," and turn it over the shoulders of Mary's doll, and the Queen never wore so exquisite a mantle; but, recollect, the leaf of *Zammara* makes the best mantle for Mary's doll, and the pollen of *Zammara* makes the best nosegays for Mary's mother, and the first variegated seedling from the race of *Lucida* and *Zammara* will make the best shot-silk bed with two-year-old seedlings of *Verbena venosa* for all of us.

There is no great beauty in the flowers of *Zammara*, but lots of it are sold by Mr. Jackson for window plant, on account of the Spanish mantle leaf.]

TO CORRESPONDENTS.

GARDEN PLAN (P. II.).—The plan is very good. The planting is so good that a seeming defect should not pass unnoticed. In the first group, from 1 to 7, the four flank beds, 2, 2, and 5, 5, do not correspond in colour; therefore, 1 and 7 need not correspond either. 7 ought to be scarlet, say *Tom Thumb*, or else 5, 5, must be scarlet, which will not tell so well. 12 and 13 must never stand "side by side," on any principle of planting; and, in addition, 12 is an attempt to balance 4 on the other side of the walk, a worse error than the first, because the two groups are not laid out to match. Keep 13 as it is, then discard the plants in 12, and match 12 with the plants in 14. The rule for altering this last group is this—three beds in a group, no matter how the beds are placed. No two of them can be planted with white flowers, and no two of them must be planted with variegated plants. But *Mangle's* would be in place as edging to 12 and 14.

DESTROYING WORMS (*Hope*).—The only safe way is by applying frequently common salt and lime water. This kills some, and drives the others away. Gulls and other birds will devour many, if kept in your garden.

ANTIRRHINUMS (X. F.).—Any of the nurserymen and florists, who advertise in our columns, can supply them. We cannot recommend any one in particular.

LILIUM LANCIFOLIUM FROSTED—HEATH CUTTINGS (J. Parks).—You would have acted more safely to have taken the lights off your pit during the day, and put them on at night. We can hold out little hope of your getting blooming shoots this summer; if so, cut down as you say. Be thankful if they grow sufficiently to preserve and ripen their bulbs. In previous volumes, you will find full directions on Heath striking. Small young shoots, about one inch long, and getting firmish at their base, with the leaves removed from one-eighth to a quarter of an inch at the base end, cut clean across there, then dibbled in silver sand, in pots suitably prepared and drained, and covered with a bell-glass, properly attended to, as previously detailed, will generally ensure success. We would repot no Heaths in bloom, or showing bloom. The best time to repot is after blooming, and when you have given the pruning necessary, and the fresh growth is growing freely. In such old plants as yours, much vigour may be given by surface dressing. If you resolve on shifting, use pots only a size larger; water the balls well previously, and just ease the roots on the surface of the ball with your finger, or a little stick. When these roots run freely in the new soil, you may then give a larger shift. In all such old plants there is risk in shifting.

INODOROUS FELT.—A Subscriber may obtain it from Messrs. Morton and Co., 2, Basinghall Buildings, Leeds.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MAY 26th, 27th, and 28th. BIRMINGHAM. Secs., Messrs. Titterton and Cattell, 26, Worcester Street.

JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, Hammet Street, Taunton.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. Sec., Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. Sec., Mr. James Becsley.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.

AUGUST 30th and 31st, and SEPTEMBER 1st. NORTH HANTS. Sec., Mr. T. Moore, Fareham, Hants.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

"MY HONEST FRIEND, WILL YOU TAKE EGGS FOR MONEY?"

—A WINTER'S TALE.

MINUTES of evidence taken before a select committee, for the purpose of inquiring into the charges made against the sellers of eggs.

R. S.—Clerk in the City. Thinks the egg sellers ought to be exposed. Wrote himself to the *Times*, but they did not put his letter in; supposes they would have done so, if paid for as an advertisement. Wish they might —; beg the committee's pardon—was going to forget himself. Bought some eggs at an egg merchant's; they were marked, "new laid;" twenty for a shilling; said they were for sitting. Dealer offered to pick some at a penny each; had twelve; hatched only one chicken.

THE CHAIRMAN said, the result surprised him.

R. S., *continued*.—So it did him; the chicken was a cock. Did not know the breed; had showed it to good amateurs; nobody could tell him. Had remonstrated with the seller; he was very rude to him. Had no hesitation in saying, he had been infamously swindled; his own family laughed at him.

T. B.—Purchased eleven eggs on the 6th of February. The hen came off on the 29th March; only five chickens.

Question put—"If the eggs were bought at the date stated, how was it the hen did not come off earlier?"

T. B.—The plaguy hen would not sit before. Knew he kept them a month before they were put under the hen—what of that? Bought them from seeing an advertisement in THE COTTAGE GARDENER. Complained to the person who sold them; had a very civil answer; didn't offer to replace the bad eggs; would rather he had been saucy, and had replaced the eggs. Would not expect two chickens out of an egg; never heard of such a thing. Was quite willing to expose the seller, but would not subscribe towards the expense of doing so.

T. F.—Was a grocer for years; is retired to a cottage; his own property; copyhold, but as good as freehold; has five

acres of meadow; his own also. Wanted some poultry; bought eggs; liked to superintend and rear his own stock; all the eggs bad; knew it from the first. Took them from under the hen, and tried them in cold water every day; broke them, and threw them away; no chickens in them; knew there were not; not angry; won't catch him buying eggs again. Happy to see any of the committee. Laurel Cottage, facing the brick-field, and next door to the public-house.

H. B.—Bought eggs of five different people; thirteen of each. Hatched two-thirds; would have been satisfied with half; all good birds; taken several prizes. Thought the fault was generally with the buyer more than the seller.

W. W.—Bought eggs for years; always did well; bought and sold now; meant to continue; all his stock reared from bought eggs; would show against any one. It was a parcel of stuff to say travelling hurt them. Sold three birds for £12, that came out of three half-crown eggs. Had complaints some times; could not help them; did not care for them.

F. G. R. DE L. JONES.—Came forward on principle. Personally had nothing to complain of; rather liked to see his name in print. Thought those who exposed imposture ought to be supported; had a natural contempt for dealers; liked to show them up. Considered himself strictly an amateur; never exhibited. Bought three sets of eggs of a dealer; hatched nearly all; always considered it an accident. Was a professional man—not exactly a medical man, but he had discovered an antibilious pill. His fowls were Polands.

X. Y. Z.—Said he had only lately taken to poultry; had done so with bought eggs only; his success had been astonishing; he was perfectly satisfied; nay, more, he was delighted; advised all his friends to buy eggs. With the chairman's permission he would detail some of his experiences in crossing.

THE CHAIRMAN said, however happy he might be to hear them, yet, as it was foreign to the purpose for which the committee met, he must decline.

X. Y. Z.—Would merely then remark, that as he had observed few people cared for the white of the egg, the attention of amateurs should be directed to such crosses as would, in time, produce them entirely filled with yolk.

Contrary to custom, we are enabled to state all that transpired. The last witness having retired, the Chairman said, "Well, gentlemen, the egg-sellers have it." "Yes, yes, yes," said all but one. That gentleman rose, and placing himself in a proper attitude, said, "Sir, when I think, sir, that—that—that the eyes of all the poultry are upon us—(laughter); I mean the—the poultry world. When, sir—I think, sir—the eyes, sir—as I said, sir—the eyes, sir—of the world, sir—are upon us, sir—it is duty, sir—yes, sir—a duty, sir—we owe to, sir—to society, sir—to ourselves, sir—and to poultry, sir (*sit down*). I won't sit down, sir—and sir—I won't be put down, sir. I am the organ of a body—a great body—an aggrieved body, sir. I am their mouthpiece, sir—and I should not, sir—have done my duty, sir—if I had not, sir—thus plainly represented their sentiments."

Just as he sat down, word was brought the dinner was on table, and the chairman, having reported progress, obtained leave to sit again.

BIRMINGHAM SUMMER POULTRY SHOW.

WE have to announce a second annual Poultry Show for Birmingham. The meeting now determined on, we are authentically informed, is not in any way antagonistic to the original December Show, for which Birmingham is everywhere renowned, although proceeding from quite a different committee of management. The premiums are liberal, and the exhibition will take place in Bingley Hall, as on previous occasions of the Birmingham Winter Poultry Show. This arrangement is with the perfect concurrence of the Birmingham Council.

Its promoters hope that, from the proceeds of the coming Show, a "Summer Chicken" Show for Birmingham will be permanently established; but, from the time to give notice being somewhat limited, it was, at the outset, deemed prudent to confine the first exhibition to fowls that are adult.

It is arranged for all eggs laid during the exhibition to be broken immediately, by parties specially retained for that purpose; and another rule, *that will be strictly enforced*, prohibits "any member of the Committee, or any exhibitor,

being admitted into the Show-yard during the time the Judges are making their awards; and this rule will equally exclude all 'feeders' that may have charge of the birds at other times."

It is scarcely necessary to point out the great influence on Poultry Shows, that must be attained by the careful and early management of chickens, and the time at which this meeting will annually take place will be as anxiously considered in future arrangements; the Committee, and a few others, have subscribed a fund for its permanent establishment, and there is but little doubt entertained in the neighbourhood, that its success will equal that of the "parent Show," which has hitherto held so high a position among our poultry exhibitions.

The Committee are all well versed in everything essential to success in such adventures, and we are assured that neither time, trouble, nor expense will be spared, both to secure and to deserve a successful issue.

WORRALL CONTROVERSY.

As we said in our last number, this ill-commenced and ill-conducted wrangle had better cease; and it shall do so after the following explanations to which Mr. Hewitt and Mr. Chune are entitled, in reply to Mr. Worrall's assertions.

Mr. Worrall stated, that Mr. Hewitt's appointment as Judge, at the Preston Exhibition, was "as a last resource," in consequence of Messrs. Baily and Pulleine declining to act as Judges at that Exhibition, which declining took place at Liverpool, on the 20th of January. This is all totally untrue, for we have before us Mr. Oakey, the Secretary's letter, offering Mr. Hewitt the Judgeship, in accordance with "the unanimous wish of the Committee." That letter is dated December the 23rd; nearly one month before the other two gentlemen were requested to act.

Mr. Chune's reply to Mr. Worrall is as follows:—

"MR. CHUNE'S GOLDEN MOONIES.

"In THE COTTAGE GARDENER, a week ago, I noticed Mr. Worrall's letter, and his remarks upon my Birmingham prize pen of Golden Moonies, and which remarks are perfectly false. Mr. Worrall says 'that Andrews told him the birds I exhibited at Birmingham, were not pullets, but one an old hen.' It is very strange, that Andrews could tell Mr. Worrall this, when a few days after the Birmingham Show, I wrote to Andrews, and asked him how he liked the birds I exhibited at Birmingham. He replied thus—'Trade in this part is very bad, and I did not go to Birmingham, but hope I shall see your birds at Preston.' I never purchased but two hens of Andrews, and those were very inferior, and were actually sold and sent off during the Show week, to a gentleman whose name can be mentioned, if necessary. So that it was an impossibility for me to exhibit a hen purchased from Andrews, at Birmingham. To convince Mr. Worrall that I was not in want of birds from Andrews, I can show forty as good pullets of last year, as anyone, and shall be pleased to show them against forty of Mr. Worrall's, for a £20 cup. The birds must be *bona fide* his property, and in his possession at the date of this communication. If I were Mr. Worrall, I would, for my own character's sake, confine myself to the truth."—J. B. CHUNE, *Green Bank, Coalbrookdale.*

Besides this, we have many other letters relative to Prize Rouen Ducks, sold and delivered to two different parties, so that two pens were miraculously made out of one; and various others, all "merry descants upon each other's sins;" but we will publish none of them, and earnestly hope that these endeavours to convince us that there are more dishonest poultry exhibitors, than we are willing to believe, may be groundless suspicions.

CHARACTERISTICS OF COCHIN-CHINA FOWLS.

WHY should a Grouse, or Partridge Cochin cock, have a black breast? I object, decidedly, to the black breast, because you will find it is produced, in the majority of cases, by crossing with the black Cochin hen.

I had five cocks hatched in June (Bridge's strain): four were nearly buff-breasted; the other, being the nearest approach to a black breast, I saved, and now have in my possession. He is a large bird; his ear-lobe very much stained; breast a little mottled; and he shows his relationship by answering to the complaint Mr. Baily makes of black Cochins, many of his under feathers (hackle particularly) are white, and others barred with white. Of course, he is worthless, and must be killed, or sent to Stevens's.

Do you not consider Cochins celebrated for attacks of in-

digestion, and deranged egg organs? Mine (I have now five) are nearly always ill, one way or the other, sometimes both—I am sure they are not over-fed—and my experience is at fault. I have thought that a meal supper caused indigestion. A neighbour of mine gives nothing but soaked barley, and with the best results. Unfortunately, my fowl-house is built partly over a large cesspool, two feet below, and cannot be placed in another position. I can smell nothing; but I much fear that the pestilential vapour rises through the ground, and causes ill-health to the fowls. This cause has only occurred to me lately, though, for a twelvemonth or more, I have had quite a hospital, and very few amenable to medical treatment. In fact, my best pullet died a short time since, and the rest (two new ones) are far from well, and their digestive powers very weakly, but thirst intolerably at times.—HENRICUS.

[Early experience in Cochins, from their first appearance, taught that the black breast was indispensable in the Grouse birds. *All the first birds* were of that colour. Mr. Punchard showed this colour at Birmingham, and made the then exorbitant price of two guineas each. The breeds afterwards were intermixed, because the second importation were Sturgeon's buff. The first were given to the Queen. This breed is still suffering by the crosses resorted to, when they were ridiculously dear, and hence it is that, amongst the Buffs, there will, at times, come a mixture of the Grouse feathers. It must be borne in mind, the Grouse birds existed years before the Black were thought of. The first Blacks were shown at Mr. Fairlie's Show, in Cheveley Park, and were accidentally produced. They were not then in those days used for making black breasts.

Cochins are prone to make fat, and die in the laying time, and they soon wear out; but during their lives we consider them very healthy birds. We have for years fed the last thing before roosting-time with meal, and have always found them do well; but damaged meal, or any other faulty food, is, in our opinion, false economy. We have no doubt the pullet that died on her nest was fat inside.

It is hardly comprehensible to us, how there can be no place, than the unfortunate one you describe, for so small a number of fowls to roost. The real wants in a poultry-house are very trifling, and five fowls might, on a pinch, be accommodated in a large dog-kennel, or any such thing. You can hardly look round your premises without seeing a place, or a large box, that, with trifling alteration, will not answer your purpose.

Give all your birds a table-spoonful of castor oil; give them a fresh roosting-place, and they will do well.]

OUR LETTER BOX.

TOBACCO PILL (*A Three Years Subscriber*).—This remedy for gapes recommended recently, is to be given whole. The administration of soot and butter is useless. We believe that a moderate quantity of nourishing food, plenty of green food, a good range, and clean water, are effectual in preventing the gapes. We adopt all these, and *never had a single instance of gapes*. The symptoms you mention, all show want of vigour in your fowls. We cannot point out a remedy without knowing first your system of feeding, lodging, cleaning, &c.

SPANGLED AND PENCILLED HAMBURGS (*Ignoramus*).—There are Gold and Silver of each of these—four distinct varieties in all. If you refer to some of our indexes, you will find full explanations and drawings illustrating the difference between Pencilled and Spangled feathers. The same are in our "Poultry Book for the Many."

CROUP (*J. P.*).—There is no such disease in fowls. The "complaint in the throat" must be the gapes. See what has been said recently about this.

POINTS IN FANCY RABBITS (*Lapin*).—You will find these points particularised, and a drawing of a first-rate Lop-eared Rabbit, in our 439th number.

LONDON MARKETS.—APRIL 26TH.

POULTRY.

The market is tolerably supplied with poultry, although much is of an inferior description. Small chickens would appear to be more plentiful than they were last year, a natural consequence of a mild winter. The same cause makes large fowls scarce.

	Each.		Each.
Large Fowls ...	6s. 0d. to 7s. 0d.	Guinea Fowls .	2s. 9d. to 3s. 3d.
Small ditto.....	5 6 " 6 0	Turkeys	0 0 " 0 0
Chickens.....	3 0 " 4 0	Pigeons	0 9 " 0 10
Goslings	7 0 " 7 6	Rabbits	1 5 " 1 6
Ducklings	3 6 " 4 3	Wild ditto.....	0 10 " 0 11

WEEKLY CALENDAR.

Day of Mth	Day of Week.	MAY 4—10, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
4	Tu	<i>Diplacus glutinosus.</i>	30.169—30.105	56—23	N.E.	—	29 af 4	25 af 7	14 af 1	21	3 24	124
5	W	<i>Diosma rubra.</i>	30.230—30.210	55—29	N.E.	—	27 4	26 7	41 1	22	3 30	125
6	Th	<i>Epacris grandiflora.</i>	30.219—30.184	55—25	E.	—	25 4	28 7	0 2	23	3 35	126
7	F	<i>Erica Linnaeoides.</i>	30.135—30.111	56—28	E.	—	23 4	30 7	15 2	24	3 39	127
8	S	<i>Eutaxia pungens.</i>	30.029—29.908	60—32	E.	—	22 4	31 7	27 2	25	3 43	128
9	SUN	ROGATION SUNDAY.	29.805—29.731	65—34	E.	—	20 4	33 7	39 2	26	3 47	129
10	M	<i>Euchilus obeordata.</i>	29.691—29.626	60—46	E.	.01	18 4	34 7	51 2	27	3 49	130

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 61.7° and 40.1°, respectively. The greatest heat, 81°, occurred on the 6th, in 1830; and the lowest cold, 21°, on the 8th, in 1855. During the period 125 days were fine, and on 92 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ASPARAGUS.—Cut the strongest shoots, and allow the weakest to remain untouched.

BEEF.—Sow, if not done before.

BROCCOLI is sometimes brought forward too fast by a change to warm weather, when it is advisable to dig up some before they are fully grown, to be laid in by their heels in some cool place, to produce a succession. After the heads are cut for use, the stumps to be removed, as they harbour slugs, and impoverish the soil.

CABBAGE.—If the ground is hard between the autumn-planted, it should be dug up, and broken fine with a fork. Prick out plants from the seed-beds, to make them stocky before their final planting.

CAULIFLOWERS.—Fork up the surrounding soil, and give them a good soaking of water.

CELERY.—Prick out into a cold frame with two or three inches of rotten dung on a hard bottom, and two or three inches of light soil on the dung. They will transplant in proper time with a mass of fibrous roots to each.

CUCUMBERS.—Give air daily, and occasional waterings moderately. Train out the vines, or runners, regularly, and keep up a brisk heat by linings of hot dung.

ENDIVE.—Sow a small portion only, as it is apt to run to seed.

HAND-WEED beds of small plants.

KIDNEY BEANS (DWARF).—Sow for succession, and a few in pots, to fill up any vacancies that may occur in the open ground.

LETTUCE.—The oldest plants to be liberally supplied with water, and the *Cos* sorts to be tied up, to form heads.

PARSLEY.—Sow, as it is always in request.

RADISHES.—Sow the long and Turnip-rooted sorts.

SAYOYS.—Prick out the young seedlings in beds three or four inches apart, to acquire strength for final transplanting next month. Sow the principal crop for the autumn and winter supply.

SEEDLING CROPS making their appearance above ground, to be watered, if the weather is dry; but as repeated waterings are sure to cake the ground, and, therefore, to make it most unfavourable for the growth of seedlings, we would advise, where practicable, to shade them with a few branches, or any other light material, to prevent evaporation.

SORREL.—Sow.

TURNIPS.—Sow.

FRUIT GARDEN.

FRUIT TREES.—Clear both young and old from all root suckers and shoots emitted from their stems.

STRAWBERRIES.—Keep the plantations free from weeds.

Proceed with disbudding *Peaches*, *Nectarines*, and

all wall trees during the summer, to ensure a more healthy and fruitful state than can be attained by any winter or spring treatment.

FLOWER GARDEN.

Beds to be dug, and fully prepared for the reception of the usual summer plants, previous to planting. When the nights are warm, seeds and herbaceous plants, and recently-transplanted trees and shrubs, should be watered in the evening, that the soil may gradually imbibe the water; but if the nights are cold, the early part of the morning is the best time for its application. Some plants for masses, such as *Lobelias*, *Pentstemon gentianoides*, *Calceolarias*, *Verbenas*, &c., may be planted out in sheltered situations; and if frosts should occur, a few branches laid over, or stuck about the beds, would afford sufficient protection. Recently-planted Box edging, and fresh-laid turf, will require water in dry weather.

Proceed with weeding and rolling the walks when damp.

ANNUALS.—Some of the early-sown will now require thinning out and to be topped, to make them bushy. One plant, if allowed to expand to its natural dimensions, will be more effective than a dozen crowded together on the same space.

DAHLIAS.—Harden off cuttings, which have been potted, preparatory to planting out.

HERBACEOUS PLANTS.—The shoots to be staked, and tied out separately, not bundled together, as is frequently done.

WILLIAM KEANE.

FARFUGIUM GRANDE.

For the next few years this will be the most popular plant among the fancy variegated-leaved plants, because it is, like *Isolepis gracilis*, everybody's plant; a plant for the Queen's drawing-room, and which will also do for the rooms and windows of all her Majesty's subjects in the British isles; likewise for their rock gardens, wilderness dingles, and all fancy works in roots, stones, and all manner of rustic work. That is to say, provided it is kept on short commons at the roots, and not too much exposed to the sun; but above all, that every slug, and snail, and nibbling creature, within its reach, be caught and "killed as dead as a hammer," before the plant is risked out of doors.

But it is as a pot plant, and a trade plant in pots, that it will be most valuable and valued. It will be in Covent Garden Market this time next year at sixpence a pot, as sure as my name is Donald; therefore, seeing that there is no reason to prevent *Farfugium grande* from becoming a "state plant" in the markets of Great Britain and Ireland, in less than two years from the time it was sold from two to three guineas a plant, I shall proceed to show the way to that point. But having arrived at that point myself, in a most extraordinary manner, and in a very round-about way, I must tell the manner and the way, to make good

my tale, but without going much "round about the bush."

Instead of going into St. James's Hall the first day of the Horticultural Show, during her Majesty's private visit, as was my wont on similar occasions ever since her Majesty was married, I rather availed myself of "Dr. Lindley's consummate skill, and practical good sense," and spent the two hours, from ten to twelve, in Mr. Wild's Great Globe, in Leicester Square, to look over the latest discoveries in geography—Physical Geography being my own hobby. Mr. Atkinson's large book of his travels in Siberia, for the last six years, corrects some of Humboldt's positions in Central Asia; and Dr. Livingstone's discoveries have "taken" so well, that Mr. Wild has made an exception in the doctor's favour, by indicating his routes in detail. What I was curious about was, to see how far the unknown parts in the "Travels" corresponded with the plan, or map; but I was prepared for the difference, after passing Lake Ngami, beyond the route of former travellers. Nor is there much, on the face of the great map, to second Dr. Livingstone's supposed source of the Nile. But those near London, who want to improve their geography of Africa from Dr. Livingstone's travels, should consult the Great Globe in connection with it, as the route is clearly given from Kolobeng to the middle of the Great Central Valley, and hence to Loanda, on the west coast, and to Quilimane, on the south-east coast, nearly opposite the centre of Madagascar. This last is the route by which Dr. Livingstone and his party will enter Africa; and, after passing up the river Zambesi, out of the Portuguese settlement, from the place where they will find the first interruption to their steam navigation, until they reach the Falls of Victoria, the botany of that part ought to be the most interesting to gardeners of all the places visited by Dr. Livingstone; and as we may expect contributions of new plants from this expedition, for a long time to come, who will point out a better field for a botanical collector than that? or who will say, which is likely to be the next best place for botanising, in the countries embraced in these travels?

Young gardeners and gardener's sons ought most certainly to make physical geography part of their education. It is of the next greatest importance to them after vegetable physiology, of which most of our good gardeners avail themselves largely every season of the year; and even very ordinary gardeners "do" a good deal of their doings by the rules of this physiology, without, perhaps, having ever heard of it by that name. Here, then, is a good opportunity to test the young ideas, on an essential branch of their education. You may study from any point on the coast to the centre of the Zambesi Valley, the routes from the west coast particularly; as, no doubt, great exertions will be made to open a road to the west coast from the Great Central Valley, to reduce the distance from thence to Europe one-half of what it is by the Zambesi river. Send us your ideas of the botany of any of those routes, or part of such routes, and we shall record them, and wait the issue of this great expedition under Dr. Livingstone.

Such were my thoughts and ideas when I passed my eye over the Abyssinian mountains, across the Red Sea, Arabia, and on to the centre of Mr. Atkinson's travels in the great Altai range, which I followed east to the Lake of Baikal, and among the hanging woods round the lake. The Cedar of Mr. Atkinson's book was the most conspicuous, but Mr. Atkinson, like myself, is not much of a botanist; his "skill" in that direction is not "consummate," most certainly; for he only names Pines, Poplars, Birches, and Brambles, and this Cedar, which is our *Pinus cembra*.

Now, after coming home from the exhibition at St. James's Hall, I dreamed I was in a deep forest of *Pinus cembra*, on the south-east of the great Lake of Baikal, the side next to China; and there, in a beautiful artificial grotto composed of all the different stones, spars, and ores, which compose the great Altai chain, I met a Chinese priest, one of those mentioned in Fortune's "Travels," and among other plants he had several plants of *Farfugium grande*; he showed me how it came into the world, how it could increase and multiply in the world, and how the world might soon be rid of it. "Stop, father," says I, at this point in the dream; "Can you also tell me how the world might soon be rid of a certain friend of mine?" "No, no," says the father; "my mission is only to reveal some of the hidden secrets of Nature, in her vegetable kingdom, to you and such as you to whom Nature did not vouchsafe an extraordinary degree of 'consummate skill' in such things; be content with that information, my son; teach it to your own kindred, and never more aspire to fathom the depth of divination in respect to getting rid of your friends, for you yourself would be the first to mourn over the loss of any one of them, no matter how hastily he may have treated you." "Give me your hand," says I, "you are just about right;" but his squeeze awoke me.

According to his version, *Farfugium grande* is not a native of China, or, rather, not a natural plant at all, so to speak; the great *Tussilago Japonica*, of some author, got diseased under the care of a Chinese gardener, or amateur; but, like the rest of them, this amateur, or gardener, had a wonderful knack of keeping diseased plants for ever so long, and the effect of this length of time on a peculiar disease was, that the disease itself could be transmitted to generations of the same plant, as the doctors transmit the cowpox by vaccination. Propagate the diseased plant in the way we all know that constitutional peculiarities can be safely transmitted to a second and succeeding generations of it, and the coveted peculiarity—the spotted leaves induced by the first disease—is at once and for ever established.

If the Chinaman had not acted on that "consummate skill and practical good sense," for which a certain "barbarian" has been lauded to the echo in our happy land, the spotted peculiarity of this plant might have been lost to him in the first instance, and had not the old woman kept Mr. Fortune in tow later than he expected, we, too, might have lost the benefit of the Chinaman's skill; but now, having the benefit of two such lucky hits, let us take the advantage of the first of them by the propagation of the plant after the Chinese fashion, and if we do not have it on sale in Covent Garden Market, by this day twelve months, I did not get a vision in the night to much purpose.

But, how did the Chinaman happen to know of the safest way to propagate a plant, so as to inherit a specific peculiarity? Have they tracts on Vegetable Physiology in China? Or what? I cannot answer these questions, but I can answer for it, that I was told that the surest way, and the easiest, and simplest way to increase *Farfugium grande*, is by cuttings of the leaves with an inch or so of the footstalk, just as one might propagate a *Fuchsia* or a *Gloxinia*. I was also told, that certain peculiarities affecting plants appear first in their leaves, and my own experience has taught me, that unless such leaves can be propagated into plants, that all sports which affect the leaf only must necessarily be lost, if the disordered juices are allowed to mix and circulate through the normal structure of the plant; but if the sport extends to a portion of the shoot, and that portion is cut off as soon as it is affected, and made into a cutting, that sport is saved; therefore, the first moment you see any of these sports, make sure of it that way instantly, as by allowing it to remain only for a few days, it may get so mixed with the natural juices as to prevent the possibility of retaining it.

There is one other process, a very simple one, which I would

recommend to the curious in such matters, and that is, to graft the leaf of a variegated *Tussilago* upon a leaf of *Farfugium grande*, and if they will not "take" that way, inarch them. The footstalks ought, certainly, to unite by inarching, if not by grafting. Then, who knows but the white of the *Tussilago* or Coltsfoot leaf, may not appear on the *Farfugium* leaf after awhile. But they say, that when a sported plant is first got on roots of its own, it is then easier to inoculate it in this way than at any future period, and the reason for that is obvious; the older it grows the more confirmed is the sport, and the more the sport is established, the less likely it becomes to be affected by foreign influences. Therefore, as perhaps, the white variegated *Tussilago* is a newer sport than *Farfugium*, the best way would be to graft a *Farfugium* leafstalk on the leafstalk of the variegated *Tussilago*; or, why not try them both ways, and why not make variegated plants at pleasure, or at least attempt a thing so desirable?

They say, if you put a bud of a variegated Jasmine in a green Jasmine, the green one will become variegated after awhile; and if that be true, you may depend upon it the thing has not been ordained for the Jasmynes alone, but for our learning, whether we take the hint or not, by budding or grafting every one of the present races in which variegated plants appear.

I have said already, that the leaves of scarlet Geraniums will root by their footstalks, but they do not put up a shoot under out-door culture; but hundreds of soft-wooded plants, and herbaceous plants, remain yet to be proved that way. Has anyone proved that a variegated Yucca may not be propagated by its leaves? I believe not, but if I go on thus, I shall not believe the editor, if he were to say, your articles are never too long,

D. BEATON.

A FEW WORDS ABOUT CAMELLIAS.

GARDENING is a profession which, it would appear, cannot remain stationary for a day; for who will not confess that, during every day's practice and observation, something occurs which, although not at variance with established and recognised principles, serves to modify, or qualify, in some degree, previous practice in some subject or other? Indeed, this is wisely ordained, and the meaning is surely obvious to all, for by such an ordination fresh life is, at least, annually infused into every department of gardening. What is there in gardening affairs that has not been written and re-written upon a hundred times, and yet will, in all probability, be the subject of some penman a century hence? The subject of my present remarks has thus received a share of such attention; but, after all, where there has been one page written about Camellias, there has been a hundred about Geraniums; and I am not aware that they carry such a preponderating amount of importance. Now, although I have nothing particularly new to offer, as to Camellia culture, yet I am desirous of "looking them up," to point to the most material feature in their culture, and to offer observations on those evils, which are so very frequently the subject of complaint, in the pages of THE COTTAGE GARDENER.

We all know that Camellias are grown with various degrees of success. When in the highest order, they are foremost amongst ornamental plants, both on account of their glossy dark green and amply developed foliage, as also their beautiful flowers, which are of so much importance in the bouquet, and various other purposes, as also to the plants themselves. But the difference between a high-grown Camellia, and one badly treated, is as wide as the poles asunder; the latter a disgrace to the plant house. Let us first inquire, what is the cause of healthiness and fine blossoming in Camellias, and also that of the reverse. In the first place, a perfect root action, or, in other words, a pot well filled with healthy roots, situated in a nourishing medium, and watering duly attended to.

I will here refer to one of the most common com-

plaints concerning them—which is the casting of their buds. This is often imputed to the atmosphere of the house, but, in the majority of cases, most unjustly. I know of nothing in-doors that could thus effect them, but an extreme range in the thermometer, or the escape from the flue of deleterious gases. But the thermometer must either sink to 12° of frost, or rise to nearly 100°, before they could be thus affected; and I am not well assured that this would accomplish it. But a bad root will speedily cause this disaster, and such a root may ensue from a variety of causes, singly or combined. One of the first and most common causes of an imperfect root action, is stagnation in the soil, whether through a stoppage of the drainage, or a closed-up texture in the soil. If any person, not understanding the Camellia, finds, on watering, that the water stands on the surface of the pot, for five minutes only, without passing away, he may be sure that there is stagnation either of soil or drainage, and may at once set to work to examine the condition of the root.

This question, however, will naturally arise—At what period is it best to perform this? I answer, that it may be done the moment the buds are cast. In some cases it is well to shake all the soil from the roots, and to wash them; but this refers mostly to *young* plants. In other cases, the sour and clogged soil must be dislodged as far as possible. About modes of potting and compost, I will speak presently in a general way.

Bud-casting is frequently a consequence of the want of water; few plants are more liable to be abused this way than the Camellia. Our amateur friends need not be surprised at this, when I venture to affirm, that I have met with more than one practical gardener, in my day, who have not rightly understood the habits of the Camellia in this respect. For my own part, I apply a great deal of water, perhaps more than most, and I always succeed in blossoming my Camellias in fine order, from the beginning of November until the succeeding April, when I am obliged to pick off scores of remaining blossom-buds, in order to get the plants into a growing condition for a succeeding campaign. This I have just done, April 12th.

It must here be observed, however, that as to watering, the soil in the pots of the oldest plants here, is still so free after remaining half-a-dozen years, without repotting, that the water percolates through in a couple of minutes, or less. Certainly, it is possible so to over-water a Camellia as to cause it to cast its buds; but this is rarely the case, if there be a free passage for moisture, and the texture of the soil is proper.

It was before observed, that dark and glossy foliage is much admired in the Camellia, and this leads to the consideration of what causes them, under some circumstances, to assume a yellow and leathery appearance. Stagnation of moisture is one cause of this evil, and exposure to too much sunlight under circumstances of bad root action, as also a too high temperature. With regard to a dark foliage, I hold it of much importance to shade them whilst they are producing their young foliage, which, in the course of development, is exceedingly tender, and susceptible of injury, especially from intense sunlight. My Camellias are now commencing growth; they are shaded with canvass, and will be for several weeks. Small and imperfect flowering is another subject of complaint; this, in the main, arises from poverty of soil, or bad rooting. Some portion of the matter is, however, attributable to late growths, and the turning the plants out of doors prematurely in ungenial periods. They are thus frequently induced to make a second growth, even whilst the buds are forming. Another charge, sometimes made, consists in a shyness of flowering; this is generally a consequence of an over-gross or excited habit; the soil is too rich,

or the shifts too liberal. It is surprising what a long time a Camellia will thrive in a pot without repotting, providing the plant has been rightly potted at first; and that the texture of the soil continues good. I have plants a yard high, or more, in seven-inch pots, and which have not been repotted for half-a-dozen years, yet they continue to blossom as usual, and look beautiful in the foliage. No cultivator should rely on a full and perfect bloom, unless he has a pot well filled with roots. The durability of the blossoms, when in a blooming condition, is a consideration. To promote this, shading is, for awhile, useful; if the weather be sunny, a liberal watering must be accorded them; and, above all things, drip from the roof must be avoided. Having now stated some of the chief grounds of complaint, let me offer a few remarks on soils, potting, watering, and general management.

Soil, or compost, is a matter of more importance than is commonly imagined, especially as to plants of some size and age. It is customary with many to indulge in the use of peaty matters, and, certainly, young plants make great progress in such composts; but these dark soils do not work so true, or carry their texture like those in which a properly-prepared loam preponderates. Indeed, Camellias will succeed admirably in loam alone, if of a proper texture, although I would not press such practice; as I am of opinion that a judicious mixture of heath soil with it tends to darken the foliage. I advised last year as to soil, but for the sake of fresh readers, or those who at the time did not heed the advice, I may as well repeat it. Loam of a rather sound texture is the most important article, and this should be turfy, and should lay in a ridge for half a year before being used. Such, is housed when dry, chopped when in a dry condition, and shaken in a riddle until the finest of the soil falls out; the latter is rejected, and the remainder is chiefly small lumps of turf of a very porous character. To three parts of this, I add one part of fibrous heath soil, handled in like manner, but chopped finer; the whole well mixed. Some add leaf soil, manures, &c., but I do not see the least occasion for them. The above compost, with a little fine sand, or charred rubbish added, if more openness is required, I have proved to wear for many years, and to preserve its texture to the very last.

The compost, being tolerably dry, should be crammed tightly, in the act of *potting*. Loose potting ill agrees with the Camellia. I need scarcely urge the necessity for a most complete drainage. This is all-important, as a part of this system of potting, coupled with the use of liquid manure, which I have to recommend. Air moisture, as to the Camellia, deserves particular consideration; few plants are more averse to a dry atmosphere. Most persons who cultivate them must have observed, how much better they look in the foliage when kept in damp pits than on stages in houses, where generally a dry air prevails. At all times, then, except the dead of winter, they enjoy what is termed a moist air. During the blossoming period, however, great care must be exercised as to drip from condensed air moisture. For this very reason, Camellia houses should have air by night, as well as by day, the whole winter, if possible; certainly, air at the highest level of the house.

All *watering*, too, should, as far as possible, be suspended during extremes of wintry weather; and when given, applied without much floor wetting in the morning, making a good fire, and giving a free ventilation for a few hours.

I may now refer to *shading*, the reasons for its use, and the period of using it. It was before observed, that the young growth is very delicate, and that it is most important to preserve a dark green and

glossy foliage; also, that intense and long-continued sunshine is averse to this character. At whatever time, then, they are making their young growth, shading, if it can be applied, is of benefit, and may, as far as my experience goes, be continued until they begin to form the blossom bud; unless this growth is made by forcing them into wood at an unusually early period; say, during February and early March. I am well aware that many good cultivators do not, and cannot, shade them; but I am bound from experience to affirm, that shading in a judicious way will produce a darker foliage than when omitted. The use of liquid manure is but too little practised, I fear, with Camellias. Now, it ought to be understood that unless, as before observed, the Camellia pot be full, or nearly so, of fibres, the blossoming of the plant is liable to more uncertainty. This is a point which should be well looked into by those who do not yet understand the habits of the Camellia. Such should be told, that too much repotting is averse to the flowering habit; and that, in order to secure the latter, unpractised hands had better avoid this repotting as long as they fairly can; and have recourse to liquid manure as a compensation. This may seem queer advice to stock growers and nurserymen, whose object is to produce young, free-growing plants in as little time as possible; but I again repeat, what I last year averred in the pages of *THE COTTAGE GARDENER*, that the objects of the nurseryman and the country gardener differ much, and that it is but a matter of common sense for each so to shape his course, as to answer the end in view; and it is almost needless to argue here, that two parties, each recognising certain fundamental principles of culture, may so modify their practice as to suit the parties respectively. It is, however, unfortunate that, in gardening matters, cultural matters are made to assume such different phases, that the uninitiated are apt to be confounded at the *apparent* want of recognition of a common principle of culture, founded on the habits of the plant in question.

My opinion, in the abstract, as to the Camellia as an embellishment to the plant houses of our gentry, for whom both nurserymen and gardeners plod their weary way, is this—setting aside all details, they are always safer and finer bloomers by being forced into growth; this allows them, by consequence, a longer feeding time for the blossom bud, and, assuredly, a longer rest, if rest it may be called. In order to obtain a dark rich green in the foliage, they must be well fed when hungry, and shaded from intense sunshine when necessary. Finally, they abhorring a high and dry temperature, a great part of their life should be spent under such atmospheric conditions, as those which in combination cause country folks to exclaim, “What nice April weather; how the buds swell!”

R. ERRINGTON.

MILDNESS OF THE WINTER IN IRELAND.—I have been waiting from month to month to chronicle the decease of a *Frogmore Scarlet*, and a *Punch* Geranium, which were left out to take their chance in my garden, in the city of Kilkenny. They were planted against a south wall, and up to the present time the *Frogmore* has received no protection of any kind, except that afforded by the wall against which it is nailed. The *Punch* was covered with matting every night since Christmas. Both are now alive and vigorous, *Punch* especially. In a bed, close by, were some plants of *Mignonette*, which remained in bloom until the first week in March, when some frosty nights killed them, with the exception of one plant, which chanced to have the shelter of some *Magnolia* branches, and it is yet alive. For mildness and dryness, “the oldest inhabitant” of the county of Kilkenny cannot recollect a winter to be compared to that of 1857-8.—JAMES GRAVES, *Kilkenny*.

DWARF DAHLIAS FOR BEDS AND BORDERS:

So many inquiries as to the minutiae of management, and complaints of want of success, from those who have not succeeded with Dahlias so well as they would wish, have induced me to devote these notes to their consideration, and for detailing every little matter that, with me, has contributed to such success, that many of them have been masses of bloom from July to the end of the season.

ESTIMATE OF SORTS.—The kinds used by me are still limited in number: I have helped many to those I have got, and have received, as yet, little but promises of other dwarf varieties in return. A hint to the wise should be sufficient. It would be a great pity if the channels of friendly interchange should ever be dried up. There is such a pleasure in being able to give, that I believe any want of reciprocity arises, in these go-a-head days, from want of time and opportunity. Allow me to give a piece of sound advice, in the shape of a maxim, to all borrowing gardeners, "*Take what you can get or want with you, but seldom or never ask a gardener to send you what you want.*" The time and the material are little missed in the one case; they often constitute serious items of consideration in the other.

The *Purple Zelinda*, notwithstanding its poor, pointed-petalled flower, is still deservedly a great favourite, and is about the earliest, and the easiest to manage. Height from fifteen to twenty-four inches, according to soil and treatment. The width of the plant is often considerably more. I have had rows, thirty inches across, a dense mass of purple, with just a small green leaf peeping out, here and there, as a relief to the mass of colour.

White Zelinda, sent out by Mr. Fleming, of Trent-ham. Some people say it is an old variety; but what of that? Whoever heard of it before Mr. Fleming brought it into notice? He never said he raised it. It is much the same height as *Zelinda purple*, but quite different in habit. The flowers rise in long, strong footstalks, standing boldly free of the foliage. The flowers are good, medium-sized, and the white sometimes tipped prettily with lilac. This is a most desirable variety.

Scarlet Zelinda, *Crystal Palace Scarlet*, and other aliases; this is more upright in growth than purple *Zelinda*; height averaging thirty inches; flowers small, but plentifully produced, standing clear of the foliage.

Mrs. Labouchere, buff and white, free blooming, flowers small; average height, thirty inches.

Prince Arthur, raised, I believe, by Mr. Gaines, of Battersea. A fine-formed, good-sized, rich crimson flower, standing erect and strong, free of the foliage, which is a very dark green; average height, twenty inches; flowers generally a fortnight or so later than purple *Zelinda*. Habit of the plant dense and compact; should be planted pretty thickly to produce a fine effect. This, taken altogether, is the king of all the dwarf Dahlias I have seen; but, for earliness and massiveness in effect, as mere colour, it will not equal purple *Zelinda*.

Gaines's Dwarf, a lighter crimson than *Prince Arthur*, more sprawling, and exceedingly leafy in growth, and the flower very poor in comparison.

Miss Weyland, a beautiful old fancy flower, bronzy orange and white; height of plant from fifteen to twenty inches, very compact in growth, and very desirable.

Silver Florin, a beautiful white flower, very like *Antagonist*; average height of plant, twenty inches. Individual flower better, in my opinion, than even white *Zelinda*, but far inferior to that in habit; the

flowers of *Zelinda* standing out strong and well above the foliage, whilst the long footstalks of the *Florin* are so weak that the flower droops, and does not show well. In a fine bed, I have had to send a boy, at times, to turn the flowers up, and let them rest on the foliage, and then they looked well. Plants with the habit of white *Zelinda* will turn adrift all these drooping flowers. There are several other kinds, but I have not yet proved them.

I will now detail the minutiae of management.

PROPAGATION.—With respect to kinds of which I am short, I generally put the tubers in heat at the beginning of March, and take off the cuttings as they come, and strike them in a mild bottom heat, potting off when struck, and hardening off before planting-out time. In the case of all those, where I have a fair portion of roots, I merely move the roots into a little heat at the end of March, or the first week in April. Generally they are placed on the floor of a vinery, or Peach house, at work, and in about a fortnight the young shoots will begin to come. The purple *Zelinda* will generally grow first; it throws out shoots very freely, and, if many are wanted, these shoots will root as cuttings in the third of the time that those of *Prince Arthur* will do. Many people prefer plants thus raised from cuttings, but I never found them do better than those plants procured with less trouble, by merely dividing the roots, so that each shoot should be supplied with a piece of the old root at its base. Where such a piece cannot be obtained to a shoot, of course the shoot may be struck as a cutting. I prefer dividing them when the shoots are about three inches long, rather shorter than longer. Many buds will just be coming when some of the shoots are that length; and, therefore, the roots after the dividing are packed nicely together, watered, and sprinkled with a little rich soil, so as to permit of a second or third dividing.

These shoots, with a little of the tuber at their base, may be potted separately, placed in a slight hotbed, and shaded from the sun until growing freely. I generally place them, at first, in the shady part of such a house as they have been excited in. I seldom use pots for this purpose, or for a tithe of the plants I use for bedding purposes. I have previously described rough cutting-boxes, say six inches wide, three inches deep, and what convenient length you please; a layer of roughish, rich soil is placed over the bottom of such boxes, the shoots, with the pieces of tuber attached, are placed regularly over the box, from one inch and a half to two inches apart, and the box is filled with light rich soil, and watered. If taken off very late, the plants remain in these boxes until planting time, but are put thinner. Those taken off before the middle of April, are generally transplanted about the end of the month into the bed of an earth or turf pit; and protected with calico, as mentioned the other week. The plants are thus strong, sturdy, and dwarf, before being turned out about the 20th of May, and need not a tithe of the trouble and attention they would have required if in pots, and are better in every way from the want of extra codling. They are then lifted with good balls, and planted, and the transplanting check causes them to bloom more early and freely.

One peculiarity here is worthy of notice, namely, *having only one shoot for a plant*. Success, I believe, greatly depends on this simple fact. I have seen cases where the tubers were merely divided, and two or three shoots retained for a plant, but the result, generally, was abundance of foliage, and a great lack of flowers. In connection with this, early and massive flowering will greatly depend upon having the plants pretty strong before turning them out, as then the check causes flower-buds to be produced at once at the termination of the shoot.

Whenever this takes place, as in the purple *Zelinda*, for instance, growth upwards is arrested; the strength of growth is immediately thrown into several side shoots; and as soon as they rise to the height of the first main shoot, they, too, knot for bloom, and then the strength is thrown into other side shoots: so that in this variety chiefly, and also in others, though not quite so conspicuously, you will thus (without any stopping or disbudding) have a large breadth of colour upon nearly a perfect level.

Before planting out, the ground should be well and deeply dug, and moderately enriched near the surface. If you enrich the whole ground too much, you will be troubled with a profusion of leaves. I prefer giving half a spadeful of light, rich soil, to each plant when planted, and as soon as the first shoot knots for blooming, mulching the ground with an inch or so of rotten dung, which keep the roots cool, and saves watering.

In low sheltered places, no staking whatever will be wanted for the dwarfish kinds. As the position here is high and exposed, I generally use a feathery branch of larch, or spruce, of the requisite height, and give one tie; as the secondary shoots come, they get among the twigs of the little branch, and that generally is sufficient to keep them firm.

In very dry weather, they will want a good watering, to ensure a continuance of bloom. At all times, and especially if the summer and autumn are dripping, they will want a considerable amount of disleafing. For instance, shortly after the purple *Zelinda* should bloom, there will be a few huge leaves near the top of the plant; these I have shortened, or removed, so that more strength may be thrown into the side successional shoots, coming from the axils of the leaves on the main stem. This process will have to be repeated at intervals as to disleafing, but on the one-stem method referred to, it is seldom that ever a shoot is cut out until it has finished blooming. When the blooms begin to fade, they must be removed, as in *Zelinda purple* especially, and also in some others, the dropped petals seem to be like poison to the foliage, as the places on which they rest get discoloured, rot, and decay. Of course, moderation in disleafing must be attended to, so that the plants are not rendered unsightly; but they can well spare a few of the larger leaves; the stems, like those of the common *Nasturtium*, having an extra supply of juiciness. There can be no question, that this moderate disleafing ensures, along with a fair amount of rich surface-mulching, healthy, robust growth, and a plentiful production of bloom. In planting, the distance should be regulated by the height and habit of the plant. From eighteen to twenty-four inches apart may be considered an average for masses.

Towards the end of autumn, when frost is expected, and the flowers are losing their beauty, a little earth, ashes, or litter, should be placed against the stems, to secure the crown of the tubers from danger. If the roots can be thus left for a fortnight, after the tops are destroyed, they will keep the better for it afterwards. If this process should be inconvenient and unsightly, the roots may be taken up as soon as the tops are slightly blackened; but, in that case, the greater part of the stem should be left attached, and the roots removed to an open place, secure from frost, and with a fair portion of earth attached, so that the remaining stem will help to mature the roots. When these stems have thoroughly decayed, the roots may then be placed in earth, in a close shed, and protected from frost in severe weather. I mention the above process, because I know several cases where the roots were taken up at the first approach of frost, the stems cut close off to the tubers, and the tubers at once put away, that, in the spring, were either a mass of

rottenness, or dried up like mummies, nothing but the skin of the tubers remaining.

A loamy soil suits them best, and keeps them dwarf. If the soil is light and sandy, and a little clayey loam cannot be had, use a little more dung, and tread the soil firm about the tubers.

R. FISH.

FLUES FOR GREENHOUSES.

LAST autumn I constructed a flue, for a cold frame, of common chimney-pots, which has answered perfectly hitherto. Bricks are employed for two or three feet nearest to the fire, and for the turnings of the flue: the remainder is of chimney-pots, of which the wide end is turned towards the fire, and the narrow end thrust about four inches into the next pot, and jointed with common mortar. Besides facility and cheapness of construction, this has some advantages over an ordinary brick flue. The chimney-pots being raised on bricks at each joint, the air circulates freely round the flue; from this circumstance, and the thinness of the material, the frame becomes heated immediately, and with very little fire. As few joints are required, and those afford good hold for the mortar, the smoke is not liable to escape.

I have now made a hotbed over the flue by filling in with loose brickbats and large stones to the height of a few inches above the level of the top of the flue; these are covered with some old pantiles, upon which the bed is made, and is thus supplied with bottom heat.

Any large-collared pipe tiles would, probably, answer as well as chimney-pots, and be obtained cheaper.—A. N.

MR. MARTIN MAYES.—Died, on the 4th of April last, Mr. Martin Mayes, aged 57 years, of the firm of Messrs. Garraway, Mayes, and Co., Durdham Down Nurseries, Bristol. He was well known, and highly respected by a large number of patrons, private friends, and the trade generally, and by the writer of these testimonies to departed worth. He had the credit of raising himself by his own industry, integrity, love of nature, and constant devotion to his profession, from a friendless lad to the proprietorship of one of the most extensive nurseries in England, which position he filled with the highest credit for nearly twenty years. When about seventeen years of age, he had the good fortune to be engaged at Colville's Nursery, under the celebrated Robert Sweet, F.L.S.; and in a few years, by his good conduct, obtained such favour, as to be recommended as foreman to the Durdham Down Nurseries, then held by Messrs. Sweet and Miller, at the height of prosperity and fame. He remained with these gentlemen until himself and Mr. Garraway became proprietors of that large concern. He is well known to have had a sound, practical, and extensive knowledge of plants, and the operations of horticulture in general; besides a correct taste in landscape gardening and garden architecture. Notwithstanding the constant attention and time required to manage his part of that large business, he found time and means to collect, preserve, and arrange a very extensive and valuable collection of British insects, especially the tribes of Lepidoptera, Coleoptera, and Hymenoptera, besides a beautiful collection of British birds. Whilst with Messrs. Sweet and Miller, when hybridisation was but little understood, and very partially practised, he followed that art with persevering assiduity, and raised many fine seedling hybrid Pelargoniums, one of which was named *Speculum Mundi* (raised in 1823), and realised for that firm more, perhaps, than any other seedling ever sent out before or since. He also paid great attention to hybridising the splendid tribe Amaryllids, and is well known to have been eminently successful. All these praiseworthy pursuits were followed most earnestly, though his constitution was delicate, and health indifferent: this drawback prevented him from associating and assisting at Horticultural Meetings. With all these good qualities, he added that of being a warm friend to gardeners, and a modest unassuming character. His loss to the Durdham Down Nurseries, where he has been so long a valuable partner, will not be easily repaired. Such a bright example is worthy of being held up to young men, to study and imitate. He leaves a widow and three sons to mourn his loss, and feel the want of his kindness and affection.—T. APPLEBY.

SALINE COMPOST FOR PEACH TREES.

I CAN corroborate your remarks on the suitableness of saline matter for the growth of Peach trees. Many of your readers will be aware, that the flat land around Buenos Ayres is strongly impregnated with saline deposit, so much so that, after heavy rains have evaporated, the ground is often white with a salt crust. Well, there the Peach tree flourishes amazingly. It is planted in large groves, and cut down like coppices for fire-wood, and is found to flourish there more vigorously than any other tree. I remember seeing shoots eight feet high, and with fruit on, which had grown from stumps cut down eleven months before that time—a rate of growth which may appear fabulous to many of your readers who have not visited the tropics.—W. X. W.

THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.

By P. V. M. F.

(Continued from page 61.)

OF HIVES.—You will remember what I said about *hives*. All early, or May, swarms should be put into hives of large size; such hives as will hold a bushel of wheat. *June swarms*, which come after the first week, should go into hives which hold two or three pecks, according to the size of the swarms. Have, therefore, a good stock of new hives of both sizes ready. I think any shaped hive will do; but I like them best as *flat-topped* as possible; and there ought to be a good-sized hole at the top, with a cork or bung in it. Let the hole be two or three inches across.

OF DRESSING HIVES, &c.—You may dress your hives with sugar and herbs, if you like, but it is not at all necessary. And you may also beat pots and pans to make a noise, if you please; it may serve to tell your neighbours that a swarm is in the air, so that they may come and help you to save it.

SWARMS NOT TO BE FORCED.—Some people try to force their bees to swarm early, by uncovering the hives when the sun shines warmly. NOTHING CAN BE WORSE. The swarm cannot come forth with safety to the hive till the queen is ready; and when the queen is ready, she will generally come out of herself quickly enough in fine weather, without any help of yours. Not only does a hot sun distress the bees, but it will often kill many of the young bees inside, and even melt the combs. Remember, it is not heat and fine weather only which makes bees swarm. There must be *young queens* coming on in the hive, or else, when the old queen goes off with the swarm, there would be no mother-bee left in the hive, which would soon die away. — *For the old queen always goes off with the first swarm.* This is a secret worth knowing. If you want early swarms, put your hives in a snug situation, sheltered from the wind, under a wall or hedge. They should not be too close to the wall—say two or three feet from it. There should always be room to walk comfortably behind the hives. If you put them in a snug place, like this, you may reasonably expect early swarms.

OF THE HIVING OF SWARMS.—Well, let us suppose your first swarm settled on a bush in your garden. What is to be done? If you are afraid, put on a veil and a pair of gloves, as thick as you can find them. Then go at once to the place where your swarm is settled, and sweep or shake them into the hive which you have got ready for them. Next, turn the hive up on a board or chair, near the spot where the swarm settled, and protect it from the sun for ten minutes or a quarter of an hour, till all the bees have collected within it.

HOW TO MANAGE SWARMS WITH THE GREATEST PROFIT.—And now what is to be done with the swarm? Your neighbours will tell you to let it remain where it is till the evening, and then to remove it to the place where it is to remain, in some other part of your garden. My advice, however, is this: *as soon as the bees are pretty well settled, go and put the swarm in the place of the old hive, and remove the old hive to a new stand, at some distance off.* This is a strange plan you will say, but it is a good plan, believe me, for all that it is new. And I will explain why. First of all, by putting the swarm in the place of the old hive, you will find that the

swarm will be sure to be a large one, even though it was very small, perhaps, when you hived it. For most of the full-grown bees of the old hive, when they go out into the fields, not knowing that you have changed their hive, will return straight to the *old place*, where they have been accustomed to go. They may be a little puzzled at first not to find their ancient abode there, but they will soon be content with their new home, which contains their old queen and companions. The old hive will become very empty of bees for a day or two; but in a short time it will seem as full as ever, when the young bees, left by the old queen, are hatched out of the cells.

HOW TO PREVENT SECOND AND THIRD SWARMS, OR CASTS.—The *second* reason why my plan is a good one is, because you will *seldom* have any other swarms, which generally weaken the parent hive so much that it rarely does well, or gives any honey worth taking. Besides, if *second* swarms sometimes do well, *third* swarms, or *casts*, as they are sometimes called, are hardly ever worth anything. I say, therefore, prevent your hives from swarming more than *once* a year. *One good swarm, and a strong and populous old hive, will yield more profit by a great deal than two or three weak swarms, and a thinly-peopled parent stock.* Every good bee-keeper will tell you that, if you can prevent *casts* from rising, the old hive will collect twice as much honey by itself alone, than if its population was divided into two families. And what is more, if you prevent a *second* swarm from rising, in the way I point out, and at the same time give the old hive plenty of additional room (as I shall show how presently), you will get a still larger quantity of honey. And the way to prevent second and third swarms is, as I have already told you, to put your *first* swarm in the place of the old hive, and to shift the old hive to some other place. Do this *as soon as the bees are hived*. Don't wait till evening: do it *at once*. I tried this plan, for the first time, in the year 1851. I had a very poor swarm, which rose on the 15th of May. If I had put it on a new stand, it would have given me but little honey. However, I made it change places with the old hive, and it became very strong at once, and in two months the hive had increased in weight as much as *fifty-four pounds*; and this was by no means a good year. I know that a new thing finds no favour with you cottagers; you are so fond of going on in the ways of your forefathers. But only trust me, and give my plan a fair trial, in a fair season, and you will find my advice worth listening to. There is no harm in trying.

(To be continued.)

ENTOMOLOGICAL SOCIETY'S MEETING.

THE April Meeting of the ENTOMOLOGICAL SOCIETY was held on the 5th ult., the chair being occupied by I. O. Westwood, Esq., F.L.S., Vice-President. Amongst the donations was the first part of a catalogue of British Coleoptera, edited by P. R. Waterhouse, Esq.; also, two specimens of the rare and beautiful *Carabus intricatus*, from Devonshire, presented by Mr. Reading.

The Chairman announced that, in pursuance of resolutions which had been adopted at the last anniversary Meeting, the sale of the Exotic portion of the collection of the Society would take place during the ensuing week at the auction rooms of Mr. J. C. Stevens; it having been found impracticable, with the limited means of the Society, to keep a general collection properly arranged and preserved, and having been considered more advisable to expend the produce to arise from the sale in the completion, as far as possible, of the British collection, and to increase the library. It was proper, however, to notice that the Society had reserved all those specimens of exotic insects which had served as types for the descriptions published by Mr. Kirby, or other more recent writers.

A new part of the Transactions was announced as ready for distribution.

Mr. Samuel Stevens exhibited two specimens of the splendid and extremely rare *Papilio Ulysses*, recently captured in the Aru Islands, near New Guinea, by Mr. S. Wallace. They are exceedingly rapid in their mode of flight, and, consequently, very difficult to capture.

Mr. Douglas exhibited a variety of rare British beetles, captured in ants' nests. Mr. Squire exhibited the rare *Har-*

palus servus, from the neighbourhood of Deal; and Messrs. Tanson and Waterhouse a number of minute Coleoptera belonging to rare or not previously recorded British species, chiefly taken in the neighbourhood of London.

Mr. Tegetmeier exhibited and described his newly-invented beehive, being a modification of the bar hive, and Stewarton bee box. The hive consists of two or more square boxes made to fit one above the other, each furnished with loose, removeable bars and slides. The loose bars to which the combs are attached (small pieces of gnide comb having been previously attached to the underside of each), afford great facility for scientific observation, partial deprivation, and artificial swarming, and the slides obviate the necessity for covers, keeping the bars in their places, and enable storifying, and the removal of full honey-boxes, or single bars of comb, to be most easily accomplished. They also allow the boxes to be turned upside down, for inspection, without the bars falling out. The boxes are made of seasoned inch deal, with a window at the hind part, and are so regularly constructed, that bars with brood or honeycomb may be removed, and transferred from one hive to another. The floor-boards have the entrance sunk in them, and which is capable of being closed to any required extent, by wedges or perforated zinc sliders. Mr. Tegetmeier supplies these hives himself, in any quantity which might be required.

An extended discussion took place on this subject, in the course of which Mr. Andrew Murray mentioned a curious experiment recently made in Scotland, in which male grubs were placed in a queen's cell.

VANDA SUAVIS.
(SWEET-SCENTED VANDA.)



THIS was sent from Java, to Messrs. Veitch, of the Exeter and Chelsea Nurseries, in 1847, by their collector, Mr. Lobb. On its first blooming it was doubted by some whether it was not a large form of *Vanda Roxburghii*, and others confounded it with *V. insignis*, but it has proved itself a species, and that *V. tricolor* is no more than an inferior variety of it. The sepals and petals are white, cloudily spotted with reddish-brown, and the lip is purple. In a sitting-room, moderately warm, its spicy fragrance is delightful. It is best cultivated in a basket, and requires much heat and moisture whilst growing.

CUTTINGS IN SAND AND WATER.

I THINK, as you seem to have had so much trouble in answering your correspondents, upon the subject of sand-and-water cuttings, it is just you should have that trouble acknowledged, and be repaid in the only way you can, by fair return, now and then, of the thanks which are your due, for

propagating the idea (though, as it seems, neither you nor Mr. Kidd may have originated it), and for the care and attention you have paid to the young shoots of the said idea, when it had fairly started in that very sandy-watery-material—public estimation. Accept, therefore, the thanks of a green hand. I have tried three batches of cuttings in sand and water with the happiest success, not in the window, but in a slight hotbed, and every cutting of some hundreds has been a source of pleasure and amusement, instead of being to me—a green hand, mind, a *very* green hand—the trouble they used to be, under the old-fashioned plan, which I used last year; the first year I ever had even a pot plant, as the subject of gardening experiments, though I am fast getting on for forty. How delightful the ease with which the cuttings are put in; how trim and tidy they look when in; and, above all, how safely, and easily, and quickly, are they shifted. It may be said there is nothing new in this. Very likely there is nothing new in it to many, but it is *all* new to me; and, be sure, there are thousands more than I, to whose gardens you have hereby brought a new light, and who thank you for the same. If you are not to tell anything that is not new, you must wait till you be wiser than Solomon, for he could not find there was anything new under the sun, and yet he found plenty of things worth telling, too.

Perhaps one or two little matters that struck me, with reference to sand-and-water cuttings, may as well be mentioned to you, not as teaching anything, but by my weak points you will judge where your other readers may fail, and so, when writing again on the subject, you will know what hints will be most generally useful.

My Verbenas took splendidly. At the first take up, none were dead or rotted, the few that were not struck I touched up, and put in with the second batch, where they came out beautifully. The same remark applies to the few not struck in that (the second) lot. My rooted plants partook not at all of the weedy character foretold by one of your correspondents. Of course, knowing they had no strengthening food in the sand and water, I took them out of it as soon as their heads showed they had mouths to feed with, appetite to gratify, and growth to sustain; and equally, of course, they were moved into very light stuff, though better stuff than sand; and their water supply, which had been comparatively without limit, was abundant at first, and has only been brought to the average quantum by slow degrees. Petunias did even better, I think, than Verbenas; and a few *Anagallis Brewerii* turned out excellently, and without one missing. On the other hand, *Calceolarias* (*pinnata*, *rugosa*, and *amplexicaulis*), did not answer. Very few have struck; and of *Heliotropes*, *not one* took. Now, can you help me here? I think I may venture to say, the cuttings were well made, and had the same treatment; indeed, they were in the same pans with the Verbenas, &c.

I noticed in a recent number two hints, on which I must remark. First, the use of an inverted basin for watering the cuttings. I think it must be awkward to hold, and not an easy thing to find basins to fit the various sizes of your saucers, consequently, I prefer my own plan (who don't?), which is, to pour the water from a jug held in the right hand, through a small penny tin funnel, guided all about the surface of the sand with the left. I thus avoid interference with the leaves of the cuttings, or Mrs. Green Hand's crockery, while my penny apparatus fits all the saucers (no less than four) in my propagating department.

I am now trying Chrysanthemums on the Kiddian system, and neither of the Johnson's dictionaries, known to me, will furnish words descriptive of the rampant jollity of their appearance. I dare say *they* would strike anyhow and anywhere, but I question whether any other "how" or "where" would afford the same facilities that sand and water does for popping them in and pulling them out.

The other thing I noticed was, as to plant boxes, which, as detailed, were good; so I made three, but think on a rather preferable plan. However, my object was to say, "thank you for the hint," to the gentlemen who gave it me, and lots more, for a weekly threepence. So I will not trouble you with my improvements (which, of course, imply defects), unless you say you wish to have them. [Send them by all means.]

In conclusion, I have not written this long note expecting

you to print it, my object was simply, as I said, to thank you; but if anything herein would be in any way useful, you can do as you like about either making use, or making fun of it, for I am, by no means, ashamed of being—A GREEN HAND.

WHICH ARE THE THREE BEST PLANTS FOR FORCING?

If I were asked this question, I should have no hesitation in saying that *Deutzia gracilis*, *Weigela rosea*, and *Prunus sinensis alba-pleno* are the best. All three flower abundantly, and at a very early age; the *Deutzia* sometimes blooming profusely when not more than six or eight inches high from the pot, and the others when not a great deal larger; they also propagate freely, and are easily managed. A few *Rhododendrons* and these, with a *Cytisus* or two, or a *Coronilla*,

will make a house look gay at an early period, and with very little trouble. The *Dielytra spectabilis* is a pretty thing too, but it does not always force well; an awkward, distorted growth, instead of a graceful assemblage of flowers, sometimes greeting the expectant cultivator. If some enterprising collector would but send home something in the way of the three plants mentioned above, but with other colours, he would confer a great boon on all who are anxious for winter display. A bright blue *Deutzia*, a scarlet, purple, or yellow *Weigela*, or, in fact, any additional colours to those we have, would be acceptable; scarlet flowers in winter being the most scarce, and, perhaps, yellow the most plentiful. The *Acacia*, *Cytisus*, and others, present us with bright colours of that hue; but profuse blooming plants of any colour, and of easy culture, are at all times acceptable in winter; and the *Deutzia* and *Prunus* above as whites, and the *Weigela* as rose-coloured, are, in their respective places, as near perfection as anything we have in the plant line.—J. ROBSON.

RHODODENDRON BARBATUM. (BEARDED RHODODENDRON).



Rhododendron barbatum.

DISTRIBUTION and range: Kemaon, Nepal, Sikkim, and Bhotan; 8,000 feet to 11,000 feet; confined to the dampest wooded regions.

A tree thirty to forty feet high, branched from the base. Leaves, in the very young state, sparingly hairy and ciliated; when fully developed, five to seven inches long, and from one inch and a half to three inches wide, elliptical-lanceolate, acute, rather broader above the middle, the margins reflexed and rough from the presence of small harsh hairs; the nerves sunk on the upper surface; dull but full green above, paler and quite glabrous beneath, and destitute of scales or down. Petioles sometimes quite deprived of hairs. Flowers moderately sized, blood-colour, collected into a compact globose head four to five inches in diameter. Bracteas oblong or ovate, the inner ones silky, all more or less glutinous.—One of the most beautiful of the Himalayan species, but variable in size and habit. Dr. Hooker saw it forming a low shrub in mossy swamps, and then entirely destitute of bristles on the leaf and flower-stalks.

It bloomed for the first time in England during April, 1848, at Eaton Hall, the seat of the Marquis of Westminster.—(*Horticultural Society's Journal*.)

A DESCRIPTIVE LIST OF POTATOES.

(Continued from page 27.)

DEAN'S SEEDLING.—This variety was raised from the *Fluke*, which it resembles. It was raised by Mr. James Dean, Hopton, Todmorden, Lancashire, and sent out, in 1854, by Mr. Abraham Stansfield. It is rather earlier than its parent, with shallow eye, slight roughness, moderate haulm, a good cropper and keeper. An excellent variety.

BROCKLEY KIDNEY.—This was introduced by Mr. Myatt, of Manor Farm, Deptford, the well-known Strawberry raiser. This variety is about ten days, or a fortnight, later than the old *Ash-leaf*. It has a clear skin, even eye, full size, and a good cropper. This variety I can highly recommend.

BREAD FRUIT.—Some twenty years since this variety was highly esteemed in some

parts of Kent. I have seen enormous crops of it at Wildernesse Park, where it was grown exclusively for the parlour-table, and I think, at that time, it could not possibly be surpassed for flavour by any other variety. It is a large, white Potato, with rather deep eye, and strong haulm. It is, round this part, very liable to the disease.

WEBBER'S KIDNEY.—This is a very clear, smooth-skin variety; the one end is large, and tapers gradually off to a point. It is an early Potato, with an excellent even eye, good cropper, moderate haulm, and generally free from disease. This is a good variety.

FIFTYFOLD KIDNEY.—This variety was sent out by Mr. Lake, of Bridgwater, Somerset. It is a heavy cropper, with shallow eye, and moderate haulm.

EARLY BLUE.—This old favourite Potato is now, in consequence of its being so very liable to the disease, fast going out of date; it is, however, a good variety, with an excellent eye, early, short haulm, fair-sized tubers, and tolerable cropper. I have been tempted to plant a few bushels of it again this season.

SHEWARD'S SEEDLING.—This variety was raised by Mr. Sheward, late gardener to John Freeman, Esq., Gaines, near Worcester. It resembles the *Early Manly*, both in shape and colour. It is a very heavy cropper, good eye, moderate haulm, tubers rather small, and of a yellowish colour.

ALSTONE KIDNEY.—This variety is termed by many the *Cheltenham Pet*. The size this Potato attains there is really astonishing. It is quite a distinct variety, and excellent for exhibition. The skin is very thin and white; it is full size, with a very good eye for a large Potato. It is a strong grower, enormous cropper, and a late variety; therefore, it should not be planted too closely. It is an excellent Potato for the table, and keeps good very late in the season. It has, however, one drawback—which is the case with many late varieties—it is very liable to be attacked by disease. To those who wish for a large, showy Potato, I recommend the above.

ELMLEY BALL is a large yellow variety, resembling the *Early Shaw*. Deep eye, early, good cropper, and short haulm.

OLD RED.—This Potato, twenty years ago, was to be found at every potato-warehouse, and on every potato-stall in the market-places of London. The different varieties of *Regents* have now superseded them, and this old mottled, deep-eyed, deformed red, will, I have no doubt, ere long, be quite extinct in the market. It is a strong-growing late variety, and very liable to be attacked by disease.

ORKNEY RED, alias ORKNEY BLUE.—This Potato is extensively grown in the Orkney Islands, and large quantities are annually imported into our markets at the present day. It is rather a long sort of kidney-shaped red Potato, with deep eyes regularly distributed all over it. It is a variety that delights in a change of soil, more so than any other variety I know; it is then an enormous cropper; in fact, the largest crop of Potatoes I ever saw was of this variety. The seed came direct from the Orkney Islands, and was planted in light loamy land. It is a close, dry-cating Potato, rather late, and a strong grower; should be planted rather wide apart. This is an excellent keeping variety, and generally free from disease.—**EDWARD BENNETT, Perdiswell.**

(To be continued.)

NOTES ON RECENT BEE ARTICLES.

THOSE who remember the articles on bee-keeping in *THE COTTAGE GARDENER*, some few years back, by "THE COUNTRY CURATE," will, I am sure, rejoice with me at seeing the writer's productions again, and give them a cordial welcome under whatever signature they may be put forth. In reply to that gentleman's inquiry regarding the effect of placing the swarm in the place of the old stock, my experience of the practice, which is now rather extensive, is, that in the greater number of cases (but not in all) it prevents second swarms, and I think so favourably of it, that I shall put it in force generally this year.

During the last few years, I have been making very many experiments as to the manufacture of a good and cheap hive, and, amongst other materials, I tried tubs as recommended by

"P. V. M. F.," at page 10, having them made of sound Oak one inch in thickness. My idea was, that possibly the moisture given out by the bees would prevent shrinking in very dry weather, but, in this, I was mistaken, the staves shrunk so much in summer that the hoops became loose and fell down; the tubs being used as bee-hives with the large ends upwards. How far wrapping them round with a stout rope would answer, I hardly know; but I should doubt whether a straw band would be effectual. My own tub-hives have had bottoms put in, and are now doing duty in the kitchen as pails and washing tubs.

The page following contains a communication from Mr. Wighton, which I really much regretted to see in print, it is so purely personal, that I am quite sure it cannot be interesting to the readers of *THE COTTAGE GARDENER*. I have no wish to prolong so useless a discussion as to whether Warder or Richardson be the better authority; but of two sentences I must complain. When Mr. Wighton places my statement of more than £50 having been cleared last season by the sale of honey and wax from 70 hives, as no more worthy of belief, than Richardson's falsehood of £17 profit having been obtained in one season from a single hive, he pays me a very poor compliment; and the insinuation in his concluding paragraph, that I have studied bees less in hives than in books, is neither courteous nor correct.

I have perused many of Mr. Wighton's communications to *THE COTTAGE GARDENER* with pleasure and profit; his work on bees I have read through more than once with interest and advantage, and I regret that a discussion of such a character should have arisen between us.—**W. B. TEGETMEIER, Muswell Hill, N.**

PRESERVING FRUIT WITHOUT SUGAR.

I SUBJOIN a receipt, which I have tested for two years, and found it most valuable, as it has provided a family of twelve with a constant supply of varied puddings and tarts at the price of plain suet-dumplings! Of course, *if bought*, the price of the fruit must be reckoned; but even then the sugar, the expensive item in preserving, is saved, and the flavour of the fresh fruit is retained. The bottles once purchased, my winter stock of fruit costs nothing.

To preserve fruit fresh for winter use, put the fruit in bottles, fill them up with cold spring water, tie down with bladder tightly; put them in a kettle, or copper, of cold water up to the neck of the bottles, with hay to steady them; let them simmer for a quarter of an hour, but *not boil*; let them cool in the water; wipe the bottles, and put away in a dry place. On no account open them till their contents are wanted for eating.—**ROSE CAROLINE.**

MANAGEMENT OF BEES BY COTTAGERS.

LATELY a correspondent invited criticism on what he intended to communicate on bees; therefore, we trust that he will not take offence at the following remarks on his advice to cottagers. We need hardly observe, that he speaks to them in plain language, at page 10, on the swarming plan, with some slight modifications. Amongst other things, he observes that "every cottager should keep at least ten stock hives over the winter," and says, "why should he not?" We refer the reader to his answer to this, and reply that, except in some localities, there is not sufficient food for the offspring, or swarms, from so many stocks; nay, with our bad seasons, it would be hard even to keep up that number of old hives, although they were managed as he describes, by adding the brood to the stocks "after getting rid of the old bees." But why call these old, when they are nearly, of course, of the same mixture, or age, as those in the old hives? Likewise, why not say whether the bees are destroyed upon the cottager's plan; for, if so, they seldom spare the sulphur, the fumes of which affect the brood in some measure as well as the perfect insects. Moreover, if we mistake not, the *larva* are bred with their mouths downwards, or fronting the floor of the hive; and we question, if they can come to proper maturity in a reversed position? We give this, however, with some diffidence, and will notice it again in connection with another matter.

The writer states, "that one of the greatest objections to the common hives is the absolute impossibility of taking away the honey, without destroying a quantity of combs." But this may be also applied in some measure to all hives, perhaps the Polish one the least; indeed, to his own hive with a moveable top, where the combs are cut out, for the honey cells exist in those to a considerable extent, and in general to the bottoms of several of the side ones; in fact, on the edges of all the combs. After the honey is taken away, the brood, *if alive*, must be cold, until the hive is placed "bottom upwards" under an old stock, in order that the bees may descend to nurse them, clean the cells, and collect the honey that happens to be left; which is the grand feature of the writer's plans. But he seems to overlook one very important point—Where is the cottager to find stocks to nurse the brood in the new hives, after the bees are destroyed; for those may be double the number of the old ones? It may also be observed, that the operation is performed at the end of the season, when the nights begin to be cold, and the bees draw close together, and leave part of their combs uncovered; therefore, the brood in those palmed upon them must perish.—J. WIGHTON.

QUERIES AND ANSWERS.

A GREENHOUSE CHIMNEY SMOKING.

"Will you kindly assist me in my trouble with my greenhouse? It is a lean-to, facing the south-west, heated by a flue, which has a good draught, with the wind in any quarter but the south and south-west, and then we are literally smoked out. The chimney has been raised to factory height, and all to no purpose. The furnace is placed in a shed at the west end, with a good rise in the flue from the fire grate into the house; then it takes a level course along the centre of the house for sixteen feet, turns (say four feet) at the end, and returns on the same level, until it arrives at the furnace-end of the house, and instead of going into the back wall, it takes a sloping direction up the end, until it arrives at the chimney, which is in the *front* of the house, not the back, as is usual. Is this the fault? or would a damper in the flue be of use?"—VALE OF BELVOIR.

[Were we within visiting distance we would look at your house. See what has been said on heating by flues lately. Try and get an intelligent gardener in the neighbourhood to look at your arrangements. Are you sure that your furnace-bars are at least two feet below the bottom of your flue? Even before raising a factory chimney, it would have been better to sink the furnace-bars another foot. Your flue enters at the end, why have the chimney in front? That necessitates, we presume, another crossing. The damper will regulate combustion, but we fear will not save you from back draughts. Are you sure the flue is clean, and no plaster fallen down inside? Instead of heightening the chimney, we would, in such a case, if lowering the furnace-bars was not effectual, have placed a turning cowl on the top of the chimney, so that the wind should not blow into it. We have a chimney that smoked whenever the wind was from the north. We placed two bricks, additional, in height on that side, leaving the rest of the chimney as before, and we have had no smoke since. We should be obliged if other friends would pay attention to this case.]

MILDEWED PEACHES.

"I have a Peach house containing a good crop of Peaches just done stoning, and some of them have got a white spot on them about the size of a sixpence. It is quite white and deep in the skin. I should thank you for telling me what it is, what it springs from, and how to cure it."—PEACH TREE.

[There is no question that your Peaches have the mildew. Sulphur-and-water paint put on the places, or flowers of sulphur shaken on them with a dredger, are the best remedies. If a little falls on the leaves it will do no harm. If you use water-pipes for heating, brush them, when cool, with a thin paint of sulphur and water. It is a pity that you did not resort to this remedy, or make the inquiry as soon as you saw the first symptoms. We fear, from what you state, that many of the fruit will be irreparably injured. A little sulphur on

the heating medium is a good preventive, but if you use a flue do not put any on within three or four yards of the furnace. The best preventive is equalising moisture inside and outside of the house, or so far as roots and tops are concerned. A dry atmosphere and great moisture at the roots, or dryness at the roots, and a moist atmosphere inside the house, being very fertile causes of mildew. By attending to this simple matter, we have not seen mildew on Peach trees for many years.]

FLOWERING SWAINSONIA PURPUREA.

"An 'Old Subscriber' to THE COTTAGE GARDENER would be grateful for a hint respecting blooming the *Swainsonia purpurea*. She had a nice plant given her two years ago in full bloom, and took cuttings from it, which easily struck, but neither they, nor the parent plant, have blown. They have been kept in a warm greenhouse, but look as if they had been too much drawn, being tall and weakly."

[Your plants have been kept too warm and shaded. Prune them pretty well back; keep them in the house until they make shoots freely, and in a somewhat shady place; and when the shoots are a foot or so in length, place them in a light airy part of the house, and by the middle of July place them out of doors; at first, in a place a little shaded; and in a fortnight, or so, right in the sun, but protecting the pot by plunging, or a piece of mat or turf round it. Syringe freely during evening, and house by the middle of October, and you may expect plenty of flowers.]

STORING HYACINTH BULBS.

"I should be much obliged for any information respecting drying and keeping Hyacinth bulbs, having a magnificent bed of Dutch bulbs of my own importing; I have in other years lost hundreds by mould, and I wish to prevent these from decaying."—L. R.

[When the leaves of the Hyacinths die down, take up the bulbs, and let the remains of the leaves, roots, and the outer skin, be left untouched for a month, or six weeks; let the bulbs stand singly on a board or lattice work, as in a fruit room, in the shade and exposed to the air, and let them be turned once a week, or ten days. Then rub off all the dead roots and skins gently, so as to cause no wounds at the bottom, or at the crown. Keep the bulbs still singly, and exposed to the air till planting time, but let them be turned and examined occasionally. It is drying the bulbs in the sun, and rubbing them too soon, and putting them in heaps, which destroys them.]

MANAGEMENT OF CAP GLASSES ON HIVES.

"An old subscriber wishes to be told the mode and best time to put on cap glasses on beehives, and when to remove them, as last season he took off several so soon as they appeared to be full of honey, but found it impossible to induce the bees to leave them; and after removing the bees, by destroying them, the combs upon examination were many of them found to be full of young bees. Where was the error; and how must he act this season, to guard against a similar misfortune?"—TEMPLEPORT.

[It is usually the practice to put caps, or glasses, over bee stocks as soon as the hive shows signs of crowding. It is not always possible to prevent the queen from ascending upwards, and depositing the eggs in a super; but this usually occurs when the stock-hive is somewhat limited as to size, and good fresh combs. Should the super contain brood, there is often great difficulty in inducing the bees to quit it. In such cases it is surely impolitic to resort to their destruction—a mere waste of valuable life, not of bees alone, but of the brood. Better would it be to replace the super upon the stock-hive, to remain till the brood was matured. In any event, why need you destroy the bees, when stupifying them temporarily would give you possession of the super? The latter would be of little or no use, unless it contained honey, as well as brood.

Five postage stamps will suffice for the Manual you name. Your other question is answered in another column.]

TO CORRESPONDENTS.

ROSES (W. H. A. F.).—Mr. Rivers, of the Sawbridgeworth Nurseries, Herts; Mr. Paul, Cheshunt, Herts; Messrs. Lane and Son, Berkhamstead; and Mr. Francis, Hertford, will supply any Rose which can be had. The nearest to what you mention as the *Rose of Sharon* Rose, seems to us to be the Tea-scented Rose, called *Moiré* in the Rose nurseries. It might be called *Rose of Sharon*, on account of its differing from all other Roses in its exquisitely-delicate perfume. It is our own next favourite after the old *Cabbage* Rose. We remember an old variety called the *Rose of Sharon*.

CULTURE OF HIMALAYA RHODODENDRONS (An Old Subscriber).—A very damp, dull, cold pit, with a north aspect, suits best for the whole race, until some of them get too big for it; and when they are planted out, they do best in moist shady situations. From February to October, the sun should not reach them till late in the afternoon. To stand a week, in summer, in a common greenhouse, would ruin the appearance of many of the kinds, unless they were under the eye of a scientific gardener.

GOLD FISH (J. Reed).—The diseases of these prisoners usually arise from the want of proper vegetables in the water. In our numbers 422 and 430, you will find the chief information we obtained on the subject.

INK FOR ZINC LABELS (Gulielmus).—Scrub the labels bright with coarse sand paper, and write on them immediately, by the aid of a quill pen, with the ink made thus:—One drachm of powdered verdigris (acetate of copper), one drachm of powdered sal ammoniac (muriate of ammonia), half a drachm of lamp black, and ten drachms of water. Mix these together in a two-ounce phial, and shake it every time before using. It is ready for use as soon as the verdigris and sal ammoniac are dissolved.

WORK ON PRACTICAL GARDENING (J. Havard).—Buy "The Garden Manual," published at our office. It will show you how to form a garden, and how to manage it.

ROGIERA AMENA, &c. (A Country Admirer, &c.).—Your plants are suffering from the Scale insect (*Coccus*). Paint them over with the usual mixture of soft soap and sulphur. The plants seem to have been kept in too dry an atmosphere.

EARLY SYDENHAM POTATO.—"I have made every inquiry for J. Vaux, respecting the *Early Sydenham Potato*, in order to ascertain where he might get it, and I am sorry to inform him every one round this neighbourhood is planted; but, if he will favour me with his address by taking-up-time, I will send him a few tubers."—EDWARD BENNETT, *Perdiswell Hall, Worcester*.

NAMES OF PLANTS (W. G.).—Your plant is the solid rooted Fumitory, once called *Fumaria solida*, but now known as the Bulbous Corydalis (*Corydalis bulbosa*). It belongs to the Linnean class, and order Diadelphia Hexandria. This species of Fumitory is considered a rare indigenous plant, having been found growing wild in some counties of England. It certainly merits a place in the flower garden, or wilderness; it flourishes in any soil, or situation, and thrives well under the shade of trees. We should object to it as a bedding plant, on account of the short duration of its flowering season; but we admire it as a bunch plant in the mixed flower borders, or as a margin plant in the plantations. (*C. R. Manning*).—The plant, of which you sent a leaf, is unknown to us at present, but we have the plant growing, and will make known what it is as soon as possible. We have twice before been asked the same question. (*Inquisitive*).—Your flower is an *Alonsoa*, and we believe it is *A. Warscewiczii*, but cannot be certain without seeing some of the lower leaves. (*Y. Z.*).—Your greenhouse plants are as follow:—1. *Cytisus rhodophena*. 2. *Polygala grandiflora*. 3. *Swainsonia galegifolia*. 4. *Agathosma villosum* (?); and 5. *Agathosma ciliatum*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MAY 26th, 27th, and 28th. BIRMINGHAM (SUMMER). Secs., Messrs. Titterton and Cattell, 26, Worcester Street. Entries close May 10th.

JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, Hammet Street, Taunton.

JUNE 9th and 10th. BEVERLEY AND EAST RIDING OF YORKSHIRE. Sec., W. W. Boulton, Beverley, Yorkshire. Entries close on the 1st of June.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. Sec., Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. Sec., Mr. James Beesley.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.

AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth, Shipley.

AUGUST 30th and 31st, and SEPTEMBER 1st. NORTH HANTS. Sec., Mr. T. Moore, Fareham, Hants.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

JUDGES AND MANAGERS OF POULTRY SHOWS.

I THINK there must be some misunderstanding with respect to the duties of a poultry Judge. I would ask your corres-

pondent, who signs himself "HONOUR BRIGHT," if any person is fit to be a poultry Judge, who can be influenced by either Secretary or Committee? If a Judge can be found base enough to divide his awards amongst the Committee, Secretaries, and the getters up of the Show (irrespective of the quality of their birds), simply because they are his employers, the sooner poultry exhibitions cease the better. Poultry Judges must know that there are hundreds of breeders and exhibitors who have been labouring for years; and have attained something like perfection, in many cases; will they, the poultry public (though the Judge's decision be law), when they see awards wrongly placed, suffer them to go unnoticed?

I think with "HONOUR BRIGHT," in this case, that no exhibitor ought to have anything to do with arranging the pens, or of entering the Show till the time of opening to the public; and officials ought never to enter till that time. I mean by officials, Secretaries and Committees, who employ servants to arrange the pens, &c.

With respect to the general management of Poultry Shows, I have no hesitation in saying, if your correspondent, who will send no more birds to Liverpool, will examine his own argument, he will see that awards wrongly placed have nothing to do with general management, though he himself throws out broad hints of the venality of both Committees and Judges. As for myself, I neither belong to Liverpool, nor Preston, neither did I ever show a pen at either place in my life, yet I feel an interest in seeing Poultry Shows judged and conducted in such a manner that we shall have the least possible grumbling. Therefore, I would suggest to Committees of management, the desirability of calling in a new but experienced man, to go along with one of the old Judges; one who has had great experience amongst the Hamburgs. Take one from Yorkshire, or Lancashire, to judge along with any of the southern Judges. Numbers can be found who have bred and shown poultry ever since the commencement of Exhibitions, and if one of this description was to go along with any of the old Judges, it would give general satisfaction. I think I could name the best Hamburg judge in England.—J. H., *Bradford*.

IS EGG-BUYING A SATISFACTORY WAY OF IMPROVING OUR POULTRY STOCKS?

I WAS not surprised to find from THE COTTAGE GARDENERS of last month, that many of those who have purchased eggs for sitting have so often met with disappointment. I have long been convinced, that this is the most unsatisfactory mode by which a collection of poultry can be commenced or improved, and out of many instances, I do not recollect one, in which the result has been satisfactory. Either the eggs have yielded a very limited produce, or the chickens have done little credit to the stock from which they were derived. I have myself paid as much as 5s. each for eggs, with additional charges for boxes; but, from the small per centage of birds I have obtained from purchased eggs, there has never been one, I thought, worth keeping. As to the small per centage of chickens, I do not think the motion in travelling is sufficient to explain it, for I have known eggs, which have travelled between 200 and 300 miles, hatch quite as well as if they had never been removed from the nest in which they were laid. But it is not so much the limited produce, as the inferior quality of the produce, obtained from eggs from the choicest stocks, that is the chief subject of complaint. Many openly declare that they have been deceived, but I am confident the majority of those, whose names are in your advertising columns, are incapable of selling anything which is not what it professes to be. I will now attempt to explain what, in my opinion, is a frequent cause of disappointment to the egg purchasers. In many instances the eggs advertised for sale are those of prize birds, and probably the owner sits as many as he requires for his own purposes, before he supplies the public, and when the trade is brisk every expedient is adopted to obtain as many eggs as possible. But, unfortunately, no hen, whatever her merits may be, is capable of producing an indefinite number of eggs, which will hatch first-class chickens. Every observant breeder knows that the first sitting or two, laid by a hen in the commencement of the season, are far more valuable for breeding purposes than any she may afterwards produce, and must, I think,

often remark the manifest superiority of the early to the later broods, though all may be the produce of the same eggs; and the average number of chickens is also considerably less when the hen's constitutional power has been impaired by protracted laying. So convinced am I that this is the case, that in hatching my later chickens I always select the eggs, either of hens that did not begin laying until late in the season, or of such as having sat in early spring, have recruited their egg-producing power by a long rest. By adopting this plan, much of the inferiority of late-hatched chickens may be avoided, though, in no case, I think, is it advisable to hatch chickens for exhibition later than June; and I was surprised, last year, to see one of our well-known dealers advertising eggs, for sitting, until the end of July.

I think the facts I have referred to offer some explanation of the disappointment so often complained of by the purchasers of eggs; but I am afraid it is almost impossible to suggest a remedy. It is hardly to be expected, the owners of the best stocks will supply the public until they have selected for themselves what they consider their choicest eggs; they will, in fact, keep the cream, and sell the skimmed-milk. No doubt, as your correspondent "R. B." suggests, the exhibitions, which, to a great extent, are our poultry fairs, offer the best opportunities for the amateur to obtain what he requires. But as Shows occur only at intervals, I am in the habit of reading your advertising columns, and I have no reason to be dissatisfied with the birds I have obtained in this way. If the purchaser describes with accuracy what he requires, I believe the great majority of those who advertise in your pages will send him what he wants, or state that they are unable to do so. But, I confess, I am one of those who think the egg trade has been pushed a little too far, and has led to much disappointment; and even your correspondent "K.," who very properly defends the honesty of the egg sellers, gives small encouragement to those who may be disposed to try their luck in this lottery, in which the blanks so far exceed the prizes. For if, as he says, seven in twelve is the average produce from travelled eggs, and with the most careful breeding from the choicest stock, no better result is obtained than twelve first-class birds from 200 chickens in the case of Spanish fowls, and eight first-class birds from forty-eight chickens in the case of the other fowls referred to, a purchaser of eggs would be sanguine indeed to anticipate much from his speculation. If such is his experience with first-class stock, I can only rejoice that I never sold an egg, and will now subscribe myself—ONE WHO REGRETS HE EVER BOUGHT ONE.

BLACK POLAND FOWLS.

As one of the oldest exhibitors, and, I believe, the largest breeder of the White-crested Black Poland fowls, I sincerely join with Mr. Ray, in condemning the present plan of exhibiting them with other varieties at many of the Poultry Shows. I believe them to be far superior to either the Golden or Silver, and I do not see why they cannot have a class to themselves. If the funds will not allow of their being exhibited separately, *then class Golden and Silver together*, and that will allow of the White-crested Black having a separate class allotted them. I consider them more of a distinct species than the others, and well worthy of better treatment than they receive at some of the Shows. Should the present system be continued, I, for one, shall not send my birds to any Show, in which they are not exhibited in a separate class; and I also know that others intend to do the same.

The mistake alluded to by Mr. John Jackson, of Preston, as being made by Mr. Ray, was owing to Mr. Ray taking the official catalogue of the Preston Poultry Show for his guide, in which Mr. James Dixon's Polands, exhibited in pen 676, class 31, are inserted as being *black*. I was of the same opinion as Mr. Ray, and I beg to thank Mr. Jackson for correcting it.—THOS. P. EDWARDS, *Lyndhurst*.

TOP-KNOTTED WHITE AYLESBURY DUCKS.

IN THE COTTAGE GARDENER, of January 26th, appeared an advertisement stating that the advertiser had some eggs to part with of that rare and fine bird the Top-knotted White

Aylesbury. I wrote to ask the price, and received an answer stating that the price was £1 1s. for a sitting of thirteen eggs. I sent a post-office order for the above amount. The eggs not arriving for more than a week, I wrote and asked the reason; which he states in the enclosed letter. I received the eggs early on the 9th of February. I put seven under one hen, and five under another: one was broken when it arrived. On the 10th of March two ducks were hatched, and two more on the morrow; two of them were nearly black, and the other two black and white; not the least sign of any top-knot whatever. I wrote as soon as I found the other eggs were not good, and told Mr. Turner all the particulars; but, although more than a month has elapsed, I cannot get any answer from him. I referred him, in case he should doubt my word, to three of the largest and best-known poultry breeders in the neighbourhood. The eggs, with carriage, &c., cost £1 4s. 5d. I have enclosed the two letters I received from him. The person I had the eggs from was Mr. Wm. Turner, Sefton, near Liverpool.—J. W.

[We have the writer's address.—ED.]

POULTRY AND EGG SALES.

IN answer to "SENEX" and "W. W. H.," I beg to state that some misunderstanding exists, as may be gathered by a careful perusal of their statements. Now, I have been accused of attacking the whole body of poultry fanciers of ignorance and of disappointments. The first allegation I deny, and never intended any such construction to be put upon my complaints and inquiries how to act with those who might continue to advertise what they did not sell. Neither was it from a mere selfish view I ventured to ask your aid, to remedy the evil. I never intended many—equal to a Baily, a Fairlie, a Punchard, or a Hornby in honesty, or in honourable dealing—to be included in the category; but I simply wanted a suggestion how to act when a *Dorco-pencilled Hamburg* was the produce of so-called prize grey Dorkings, or a non-descript the produce of Golden Sebrights, &c. I am too old in the fancy to imagine such things as "W. W. H." would appear to suggest; but, as some good ought to be the result of this poultry mania, and a not mere game of exhibiting amongst a few, some other method ought to be adopted to insure success in obtaining birds as advertised, so as to lead to the more general diffusion of poultry breeding. What good has yet been done in the propagation of poultry? What public benefit has resulted? Where is the cottager to procure good breeds at the prices and risk he has to run? Where is there a philanthropist in the poultry world? Without one, I am afraid no real good will result. On many topics I have, in THE POULTRY CHRONICLE, already said sufficient, I trust, to convince "W. W. H." that I know something about breeding, &c.; and that I am not quite so ignorant as he imagines. If "SENEX" is as old as his signature implies, little good would result from his perusal of the only three volumes ever published of THE POULTRY CHRONICLE. Under the signatures of "R. G.," of "TETRAO," and "LAGOPUS," I have endeavoured to lend a helping hand to all who are interested in poultry and their allies. "W. W. H." is kind enough to offer assistance, and if the season is not too late, he may yet hear from me.—R. G.

FRAUDULENT APPLICANTS FOR EGGS AND POULTRY.

IN your paper of the 30th of March, there is an article headed, "Warning to Railway Companies," wherein you express great indignation at two hens being abstracted from their baskets in returning from Hereford Poultry Show, and two of less value put in. This fraudulent transaction ought, very properly, to be made widely known; and I hope the delinquent will be found out, and punished accordingly. And as your columns have often of late recorded instances of unfair dealing, or what was by some parties considered as such, you will, I am sure, give the following recital of a poultry transaction a place in your paper, as I happen to know it is not an isolated case.

In the autumn of last year, some Aylesbury ducks were

advertised for sale in *THE COTTAGE GARDENER*, and applicants were directed to apply to me; and amongst others who did so was a Mr. C. W. Cottrell, grocer and general store dealer, of Alma Road, Wandsworth, who sent his card, and, after one or two communications, ordered a pen of three at the price agreed on. The ducks were sent to him early in November, and he acknowledged the receipt of them, and intimated that, in all probability, he would want more. I accordingly waited some time, thinking all was right; but not hearing any more from Mr. C., I wrote again and again, without receiving any reply, and a gentleman of the legal profession wrote to him, threatening proceedings; and subsequently a friend of mine called at his shop, but not knowing Mr. C., of course, the *shopman* in attendance said he was not at home. But we got to know that he had been victimising other parties in the same way, it was, consequently, determined to take the matter up; and, as the ease was one which just kept clear of the criminal law, the only course was to sue him through the County Court for the debt. This process, coupled, perhaps, with others of a similar kind, rendered Mr. C.'s abode at Wandsworth uncomfortable; but the delay and difficulty of obtaining a judgment against him, gave him the opportunity of changing his name, as well as place of abode. But the Judge eventually decided against him, and a large item of costs was added to the original debt. It is proper here to add, that, though Mr. C. never replied to any letters, either conciliatory or threatening, he did write once, when he found that legal proceedings were entered against him in earnest, begging them to be stopped, and he would pay at some future time. But the account given of him by those in the neighbourhood where he lived, and the fact of his locking up his shop, thereby preventing even his landlord entering, carried with it that stamp of fraud which cannot well be forgiven. His mode of business was said to be much varied; but advertising, and answering advertisements, seemed to have been the most profitable part of it, as by that means other things, as well as poultry, were obtained at a cheap rate. However, it is well for society that such characters should be exposed at times; and though Mr. C., under some other *alias*, may still be able to impose on the public, the facts of this case will impress on all dealers of poultry the necessity of always being pre-paid for what they offer for sale, ere they send it off. This rule ought to be made absolute; for though it offers a sort of temptation for sharpers obtaining the money, who have nothing to sell, yet the great mass of advertisers are known by their position in their respective neighbourhoods, and by having figured at some Poultry Show. The great metropolis, with its multitudinous wares, has few eggs, or poultry of the fancy breeds, for sale; and there is less likelihood of sharpers doing so well in the rural districts. One thing, however, every one must agree in, "that full exposure of all fraudulent transactions ought to be made," in order to guard the public, as far as possible, against a repetition of them. It is, therefore, with this view that I now furnish you with the above details; and if it should meet the eye of any who have been victimised by the offending party, they will see that he has not been allowed to impose on every one with impunity.—J. ROBSON.

A LAY FROM MY POULTRY YARD.

I HAD a flock of chickens,
The sweetest little things,
With tiny coat of creamy down,
And little hints of wings;
And bills like finest ivory
From Indian jungles brought;
And slender, polished legs, that seemed
Cornelian finely wrought.

How pretty their bright beady eyes,
And cunning sidelong peep,
As 'neath their clucking mother's wings
They nestled down to sleep!
How sweet their chirping twitter,
As they clustered at her side,
How nimbly on her slippery back
They hopped up for a ride!

How daintily they seemed to pick
The crumbs I loved to scatter!
How prettily they used to sip
The water from the platter!

Ah! it would take the graphie pen
Of Thackeray or Dickens,
To picture *half* the beauties
Of my charming little chickens.

I fixed for them a cozy coop,
To shield them from the storm,
And made a nest of softest hay
To keep them snug and warm.
But "ever thus from childhood's hour
Our fondest hopes decay;"
I would there were as much of truth
In half the poets say!

Oh! vain was all my tender care!
Wild March, with stormy breath
Breathed on my little nurslings—
Three slept the sleep of death.
And three of those stern March had spared,
In one sad baleful hour,
A wicked, cruel, murderous cat
Did ruthlessly devour.

More earnestly, the rest I strove
To shield from hurt or harm,
And fortune seemed to favour me—
The air grew soft and warm:
I deemed them safe—when, one by one,
To crown the sad mishaps,
The remnant of my little flock
Fell victims to the "*gaps*."

Alas! alas! all words seem vain
To picture my dismay;
And vainer still poor mother hen,
Thy sorrow to portray.
A voiceless, tearless Niobe,
By fate's fell arrows stricken—
Thou standest by the empty coop,
Bereft of every chicken!

No need for me at morn, or eve,
The dainty crumbs to bring;
No need for *thee*, poor lonely hen,
To spread thy sheltering wing.
I gaze around, and o'er my eye
A dewy dimness thickens,
And with a wailing voice I cry,
My chickens! oh, my chickens!

—Ohio Farmer.

REARING THE NIGHTINGALE AND THRUSH.


To find the Nightingale's nest we must search in May, in the banks, or hedge-rows, about three feet from the ground, for the neat structure she makes to contain her brownish-green eggs, generally five in number. The young birds should be taken when a fortnight old, and put into a roomy cage, in their own nest, while some straw is on the bottom of the cage. They should be fed every hour in the day on a paste made of a little grated earrot, white bread soaked in water, and then *squeezed*, and a little wheat meal, all mixed together. Feed the young birds with a quill, giving about three beaksful to each; also a mealworm to each now and then. At night, shut them up in a pitch dark place, that they may sleep the *whole* night, and so not feel hunger. When full grown, give each bird a full-sized square cage, with linen stretched at the top, that he may not injure his head. Feed him (giving him plenty of water for drinking and bathing) on the paste I have mentioned, with a little scraped beef added, and five or six mealworms per diem. The food *must* be made fresh *every* day. Nightingales are delicate birds, and should especially be petted and well fed in the spring, when their instinct teaches them to endeavour to escape to pair. Being at that time captives, they often pine and die.

THRUSHES should have roomy cages, and plenty of water. Nestlings should be fed on the same food as nestling Nightingales; but, when full grown, on *grated* bread and meat. They are common birds, and sing chiefly at morn and even.—"RURIS AMATOR."

OUR LETTER BOX.

REARING GUINEA FOWLS (*A Subscriber*).—Let them hatch their own eggs. You will find all needful directions for rearing them by sending seven stamps to our office, and your direction, ordering "The Poultry Book for the Many" to be sent to you. Its price is sixpence. Your other queries will be answered next week.

WEEKLY CALENDAR.

Day of Mth	Day of Week.	MAY 11—17, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
11	TU	Gardoquia multiflora.	29.765—29.623	72—38	E.	.30	16 af 4	36 af 7	3 af 3	28	3 52	131
12	W	Gastrolobium speciosum.	30.027—29.934	75—31	S.W.	.04	15 4	37 7	19 3	29	3 53	132
13	TH	ASCENSION. HOLY THURSDAY.	30.054—30.002	72—49	N.E.	.00	13 4	39 7	sets		3 54	133
14	F	Gastrolobium obovatum.	29.975—29.950	71—40	E.	.00	12 4	40 7	11 10	1	3 55	134
15	S	Gompholobium angustifolium.	30.085—29.994	80—45	E.	—	10 4	42 7	21 11	2	3 55	135
16	SUN	SUNDAY AFTER ASCENSION.	30.134—30.082	78—41	W.	—	9 4	43 7	morn.	3	3 54	136
17	M	Grevillea acuminata.	30.080—30.022	76—37	S.	—	7 4	45 7	0 12	4	3 53	137

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 63.8° and 41.2°, respectively. The greatest heat, 86°, occurred on the 15th, in 1833; and the lowest cold, 25°, on the 15th, in 1850. During the period 134 days were fine, and on 83 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

IF any vegetable crops have failed, no time should be lost in sowing more seed.

ARTICHOKES, GLOBE.—Plant, for producing a late supply of heads.

BASIL, that had been forwarded in pots, or boxes, may be transplanted, in showery weather, on a warm border.

BEANS.—Sow *Taylor's Broad Windsor*, or any other approved sort. Earth-up the early crops; and if the weather continues dry, give them a good watering before you do so.

BROCCOLI.—Sprinkle the seed-beds with soot, or wood-ashes, to protect the young plants from the attacks of the fly; and with quicklime, if there are any indications of slugs having done any injury to them.

CARROTS.—Thin. If the first main crops have failed, sow seed of the *Early Horn* immediately.

CUCUMBERS.—When the linings are renewed, water should be given frequently around the insides of the frame, as a large portion of the roots of the plants will be found there. Trenches to be prepared for handglasses, to be two feet and a half wide, and one foot below the surface, laying the soil as a bank on each side, to be filled six inches above the surface with dung that had been frequently turned over to allow the rank steam to pass off, leaves, and short grass well mixed together, to be covered with some light soil, particularly where the handglasses are to stand, and the rest to be some prepared soil mixed with a portion of what came out of the trench. The bed to be made three or four days, to allow the heat to ascend, before the soil is put on it, and then to be put on twice, about three or four inches thick at each time, with an interval of a few days between the times.

PARSLEY.—Thin the early sown as soon as the plants are up. It is by thinning them six inches apart that the finest curled is produced. A few old plants may be selected for seed.

PEAS.—Sow. If the weather continues dry, give a good soaking of water before sticking the advancing crops.

POTATOES.—Hoe between the rows as soon as they appear above ground.

SCARLET RUNNERS.—Sow in the open ground.

SPINACH.—To be thinned as soon as possible after it is up; otherwise it will very soon run to seed.

TURNIPS.—Sow the *Stone*, to come into use in July and August. Thin the early crops.

FRUIT GARDEN.

CURRENT and GOOSEBERRY BUSHES to be closely examined for the caterpillars, or their eggs that are to be found on the leaves before they are hatched. Hand-picking is the most effectual way to destroy them.

WALL TREES.—Continue to disbud; and if they are infested by green fly, syringe them with tobacco-water and soapsuds.

FLOWER GARDEN.

Where walks require to be re-gravelled, it should be done before dry weather sets in.

ANNUALS, HARDY.—Sow for late flowering.

ANTIRRHINUMS, *Pentstemons*, *Stocks*, &c., that have been gradually hardened off, to be planted where they are to bloom; as also any remaining stock of biennials or perennials.

BEDDING PLANTS to be hardened off as quickly as possible. When removed from the pits and frames, to be placed where they can be covered at night, in case of necessity; and also to take care that they are not injured by too sudden exposure to bright sunshine. The plants, if not already so, should be made entirely free from green fly by tobacco-smoke, before they are removed from under glass. Any backward stock to be encouraged to make free growth, in order to get them strong before planting-out time.

Advantage to be taken of showery weather, to give the grass and walks a good rolling. The destruction of weeds, and perfect neatness, to be maintained in this department.

WILLIAM KEANE.

HORTICULTURAL SOCIETY'S MEETING.

MAY 4TH.

THIS, the only May meeting of the Society this season, was held for the exhibition of Azaleas, and collections of stove and greenhouse plants in sixes, and these to be in pots not larger than common gardeners could use on the stages of a snuggerly greenhouse, or little stove in a framing ground. Also, for a new move in the right direction, copied by the new Council from the Crystal Palace vases round the basin of the Crystal fountain; the Crystal Palace people themselves having also copied those vases from the rustic baskets of mixed plants out in the cottage gardens, for the last thirty years. This style having been "elevated into a principle," as the French would say, at the Crystal Palace, it was very proper to offer prizes for the best designs in that style, in order that the principle might be understood by the Fellows, or such of them as are just beginning to feel their way into genteel gardening, out of a luxurious and expensive taste for vulgar show, without principle.

When a rustic basket was filled with Geraniums, Pelargoniums, Fuchsias, Calceolarias, and many other such "furnishing" plants, and set out on the lawn, on the stump of an old tree, or on three legs of its own, it was called the "Rustic Basket;" but, to get away from rustic notions, the Society, very wisely, adopted a new name for the receptacle—a French name, of course,—*jardinieres*, and which is pronounced shar-de-nyare.

Well, it was just as the seer told me in the dream,

none of us can afford to lose a friend, "no matter how hastily he may have treated you." There were some new Orchids there, and without the aid of my friend, Dr. Lindley, I could not get to the bottom of them, and I "stooped to conquer," and got all out of him I could about them; but being a bit of a rustic, and a cross-grain breeder, and things of that sort having had to be decided upon, I was requested to assist the Judges, which I did; the Society got the benefit of my crossing propensities in the lecture, and my readers will have the benefit of Dr. Lindley's great skill among the Orchids, when I come round to them. So you see that great men may slam the doors, or shake their fists, in each other's faces, and yet be excellent friends, and benefit their less-gifted brethren by their united power, or knowledge, which is the same as power.

Mr. Booth, the Librarian, has been elected Assistant-Secretary, in the place of Dr. Lindley, and he took his place next to the Chairman that day for the first time. He read the proceedings of the anniversary meeting, the gifts to the Society, and the rest of the routine; but Dr. Lindley lectured on the plants sent for exhibition. Mr. Booth is among the best practical gardeners in England, and one of the best practical botanists among all the gardeners. He was born a gentleman, every inch of him; one of those rare men whom you hear ladies speak of as "extremely civil." If Dr. Lindley had the address, tact, and affability of Mr. Booth, the Horticultural Society would have every crowned head in Europe on its roll of Fellows; and, instead of broken credit, we might have had our thousands out at interest, and the finest garden in Europe.

The lecturer was never in a more humorous mood, on such occasions; he began on the merits of the new department, the *jardinières*. There was a brilliant one from the gardener to the Duke of Sutherland at Stafford House, his Grace's town house; and a most artistic one from Mr. Macintosh, nurseryman, Hammersmith. The artistic was the winner, "beating the Duke hollow," according to the actual expression of the lecturer. It was a wide, shallow basket, perhaps four feet in diameter and six inches high, outside measure; round the edge was a row of *Lycopodium* hanging over, and hiding the basket, a vast improvement, we were told, on the vulgar taste for showy stands to hold flowers; so as to bring the beauty of the stand, with, perhaps, its gaudy colours of red, yellow, blue, or purple, in competition with the flowers. Inside the Lycopod were Mignonette, Fairy Roses, Primulas, Stocks, Cinerarias, Heliotropes, Unique and Fancy Geraniums, "sweet scented Verbena," *Deutzia gracilis*, Tulips, Heaths, Azaleas, including *Azalea amœna*, and others, rising into a pointed pyramid in the centre of the basket, and every flower seemed just in the right place.

The Duke's *jardinière* was filled with Pelargoniums, three Arum plants (*Richardia æthiopica*), Azaleas, and yellow Cytisus. *Phæbe* Pelargonium in the centre; a second early white kind after *Alba multiflora*, but the best white of that class is named *Phyllis*; the rest were more common.

In Azaleas, Mr. Ivery and Mr. Rhodes, gardener to J. Philpotts, Esq., Stamford Hill, were both best, and had equal prizes. Mr. Ivery had also six seedling Azaleas, and a box of cut blooms of new Azaleas; also three new kinds, which were very handsome; *Flower of the Day*, an improvement on *Iveryana*; *Rosy Circle*, a fine flat round flower; and *Bouquet de Flora*, in a new section. This was mentioned as a seedling from *Perryana*, but the father of the cross was *Amœna* unquestionably; the leaf, the style of growth, and the flower, are amplifications of *Amœna*; and the lecturer said, that if the flower of *Amœna* was magnified ten or

twelve times, it would be the same as the flower of *Bouquet de Flora*, only not hose-in-hose as in *Amœna*, therefore *Bouquet de Flora* must be very nearly hardy like its father. Cross this with the pollen of *Gem*, the best seedling in the cut flowers, to give more size and substance to the flowers; then, *but not till then*, cross the second generation with *Amœna* pollen, the original father, and great will be the chances that all the offspring are quite as hardy as *Amœna*, and bloom out of doors as freely as the American Azaleas. But to break the red colour, and to produce imitations of *Exquisite*, *Criterion*, and the old *Variegata*, use the pollen of *Azalea ovata*, a perfectly hardy kind from the north of China, sent to the Society by Mr. Fortune, a plant of which was at this Meeting, from Mr. Noble, of Bagshot. The habit of *ovata* is the best of all the eastern Azaleas, for the hybridiser; the flowers, which have a delicious smell, come in large close bunches; they are flat, and of moderate substance, but wanting in colour; yet, such as it is, the tint would be called lovely, if this was the first Azalea we had seen—it is between a pale violet and a French white.

The Messrs. Fraser, of the Lea Bridge Road Nursery, had the next best Azaleas, I believe. From Mr. Warner were two kinds of rare *Dendrobiums*, and the large and best variety of *Trichopilia coccinea*. The larger of these Dendrobies was figured, last autumn, in the "Botanical Magazine," as *D. nobile pallidiflorum*, and looks as if it were a cross between *nobile* and *cucullatum*, and is another lovely thing; the second is also figured lately in the "Botanical Magazine," as a variety of *D. crepidatum*, and looks as if between *nobile* and *pulchellum*, and is a little slender darling.

The Messrs. Jackson, of Kingston, sent a new form of *Lycaste Skinneri*, a pure white flower of pearly substance, and a new Vanda, from Assam, "to show that even Vanda does not always present the finest flowers."

Mr. Turner, of Slough, sent three new variegated Geraniums, and a scarlet plain-leaved kind, the latter is a good-looking flower with a white eye. The next is *St. Clair*, with a cerise colour, and a half-cast of the Nosegay shape, it comes next to Jackson's *variegated Nosegay*; the other two were at St. James's Hall, *Bijou* and *Perfection*, two very good scarlets, the latter being one of the best kinds of a white variegated leaf. He also sent a large basketful of the very finest *Broccoli* that ever was seen in April or May. It is of the breed of *Knight's Protecting*, as white as curds, and as solid as a rock, and as dwarf as any of the race. One might take it for an open Cabbage at first, as the "heart" is closely covered with the centre leaves. The lecturer took one of them up, and went at it like a man cook, but acknowledged that it was the hardest flower to dissect he had ever handled.

Next came *The Bride*, without the wedding cake, from Messrs. Dobson and Son, of Isleworth. This is a charming white Pelargonium, with a crimson-scarlet blotch. The marriage certificate said, that *The Bride* maintained the high character she obtained last year, at the wedding, probably, and the Doctor said, "he was very glad to hear it," meaning thereby, no doubt, that all brides do not as they should during the first twelve months, or before they come to "plain sailing."

Another large red Pelargonium, of the market or forcing class, was mentioned as a very useful kind, requiring little heat to bring it out early, from Messrs. Chater and Son, the great Hollyhock growers of Haverhill, Essex.

Mr. Christie, nurseryman, Leatherhead, sent two good seedling Azaleas, which might stand intermediate between *Criterion* and *Vangert*; they are better than *Vangert*, but nearly as good as *Criterion*, which is the best of all the variegata breed.

There was a large collection of miscellaneous plants

from the Society's Garden, and then four collections of stove and greenhouse plants in eight-inch pots, for the grand competition of the day, and a Derby-day it was, sure enough, also a triumphant day for D. Beaton; for in remarking on these four collections, the Doctor quoted my very words from THE COTTAGE GARDENER, in favour of that useful, moderate, and modest way of growing plants for private use. What, therefore, was the use of spending our money to introduce a vicious and vulgar taste for huge specimens, for the last twenty years? Depend upon it, all the goodness that is in this world, whether it be in a man, woman, beast, or plant, will go into a small compass.

The Messrs. Fraser took the first prize triumphantly; Mr. Tegg was second; Mr. Cutbush, of Barnet, third; and an extra prize to Mr. Rhodes. The four collections were uniformly good, and not a great deal to say between any one of them and the rest. Messrs. Fraser had a plant of *Erica Devoniana*, the most exquisite thing I ever saw. I think it is one of Mr. Story's seedlings; at all events, it is of the *aristata* breed. Also, *Chorozema varium*, *Boronia serrulata*, *Leptospermum bullatum* clothed in white, a large Azalea, *Glory of Sunninghill*, and *Pimelea spectabilis*.

Mr. Tegg had *Boronia serrulata*, *Aphelaxis humilis*, *Allamanda neriifolia*, *Eriostemon neriifolium* (not *cuspidatum*, as labelled), *Erica Cavendishii*, and *Pimelea spectabilis*.

Mr. Cutbush had *Erica favoides elegans*, *Dillwynia parvifolia*, fine; a large Azalea and *Polygala Dalmatiana*, an *Eriostemon*, and *Pimelea Nieppergiana*, a pure white.

Mr. Rhodes had the most complete *Franciscea eximia* which has yet been exhibited; the leaves were perfect, and the bloom abundant. *Boronia pinnata*, a difficult subject; *Eriostemon*, *Aphelaxis*, *Erica Cavendishii*, and a fine *Epacris grandiflora*.

There were two dishes of the fruit of the *Loquat* of China, from Malta, shown by Andrew Duncan, Esq., 76, Cornhill. They were the best of the kind I ever tasted. This would make shade, shelter, and dessert, for Melbourne, and most parts of Australia; the seeds might be sown here in a close tin case, as they take a long time to vegetate. A fine dish of well-coloured *May Duke Cherries*, from Mr. Shuter, gardener to the Earl of Wilton, Eaton Park; and a dish of *Beurré Rance Pears*, from Mr. Hill, Keele Hall; also, a hardy Bamboo, and a collection of *Epimediums*, from Mr. Bateman. The Bamboo was different from any we had seen.

D. BEATON.

THE PEACH, NECTARINE, AND APRICOT.

WE have passed through a rather severe ordeal of late. On the 12th of April a thermometer down to 22°. The Apricots, Peaches, and Nectarines were in full blossom, and, indeed, going out, and must have suffered severely in some parts. Where the canvass was rather ragged, and where totally unprotected, the fruit has suffered here; but on looking over them this morning, I find a good set of Apricots, and as for Peaches and Nectarines, it is almost impossible to thrust a pin between them, so thickly set are they.

Peaches and Nectarines are in magnificent constitution this spring, both in-doors and out. They are what I call perfect; their culture can go little further. I am not, however, assured that this is a justifiable exultation, and the Scottish poet's witty remark, as to "the best laid plans of men and mice, &c.," comes to mind. But who can help exulting over the gracious appearances of a returning summer, albeit there are plenty of breakers ahead?

Mr. Robson thinks that salt is necessary to the

Peach, in consequence of seeing Mr. Jennings's fine Peaches at Knowsley Hall. I have seen Mr. J.'s Peaches repeatedly during the last score years, and I must say that I have never in my life seen such huge trees so well sustained, and carrying such fine and regular crops. He who can thus manage such huge trees on walls, perhaps sixteen feet in height, for so many years, and without any nakedness or barrenness, must have some plan or practice of more significance than salt. My opinion is, that Mr. J. grows fine Peaches in spite of the salt. I do, therefore, think that the inference can scarcely be borne out; certainly the dashing of salt spray, to which these Liverpool gardens are sometimes liable, could be very readily dispensed with. Having taken thus much liberty with an opinion, I offer mine, and that, too, but an opinion.

We all know that the Red Spider is the great enemy of the Peach in summer, and that not one garden in a dozen utterly escapes it. A humid atmosphere is unfavourable to the spread of these pests, and surely it requires no pains to prove, that the air of Lancashire is by far more humid, on the whole, than that of Kent, or Surrey, or Buckinghamshire, or, indeed, some other counties. Indeed, the agriculture of Lancashire goes to prove this, as also our county—Cheshire. But as I may be wrong in my inferences, I will say no more, merely trusting to Mr. R.'s liberality and courtesy for the suggestions here offered. The time is now arrived for disbudding, and let me advise that every attention be paid to this process.

As before advised, it should not be done severely at once; such severity gives the trees a most unnecessary check. Three successive disbuddings are the best: the first, when the shoots are a couple of inches in length; a second and more particular one, in a fortnight or so afterwards; and a final one, about Midsummer. The pinching of robbers, or gross shoots, must be carefully attended to. Although my present remarks are only intended for a reminder, let me again direct attention to what is commonly termed *mulching*, and particularly recommend that where it is requisite for Peaches, Nectarines, and other tender trees, it be not applied until the winter-starved soil is repaid its wonted necessary amount of warmth from the atmosphere. I shall apply three inches in thickness over all the roots of Peaches and Nectarines here, on account of the heavy crops they will probably have to carry; but nobody can persuade me to apply it until the middle of May, or even later.

One point I must refer to, which is not commonly taken into consideration; is it not possible to promote the early ripening of Peaches, Nectarines, and Apricots, by a judicious use of that very covering, which had been used both to retard blossoms and to protect them from the late spring frosts? This, I am assured, can be done; and, where there is a succession required, it is worth the while of many persons to endeavour to effect this. It consists in retaining the covering until nearly Midsummer, and in drawing it down over the trees on every sunny day, whilst the sun shines hot on the wall; say about four o'clock in the afternoon, not later. This will be found to retain much wall-heat through the night, by arresting that rapid radiation from the wall and foliage of the trees, which takes place so frequently through those astonishing discrepancies between day and night temperatures which occur so frequently during May and part of June. Some Peaches and Nectarines are exceedingly liable to produce suckers from the root; these are very prejudicial, and every pains should be made to extirpate them. How they are occasioned, is a thing which has not been much considered; but one cause, I am assured, is the injury sometimes inflicted on the stronger roots through the medium of the spade.

Suckers should be pruned clear away, and dressed off as neatly and carefully as our Rose growers dress the roots of their stocks.

I may now turn to Apricots. The frost before alluded to was trying to these; they were just beginning to show their embryo fruit, and had blossomed well; but this was a severe trial for them, and they suffered much; still, I believe, there will be a good crop generally. No fruit I am acquainted with is so liable to suffer from frost as the Apricot, especially when set, and the tiny would-be-fruit has cast or is casting its covering. I have, in common with many other gardeners, known the fruits, when large enough for tarts, fairly blackened by a frost as late as the 8th of May; yet they seem as hardy as other fruits until the blossom is nearly opened. Apricots, above all the fruits we cultivate out-doors, delight in much warmth whilst in the growing state. I do not, however, here speak of intense heat, or exceedingly high temperatures at any particular period, but rather that sudden depressions are inimical to their welfare. It is for this reason, doubtless, that they succeed so surprisingly on the south front of many cottages, and small houses in various parts of the kingdom; of this I have no doubt whatever. Such walls are warmer than ordinary garden walls, in consequence of the fires constantly used inside: could it be ascertained with precision, it would be found that there were half-a-dozen degrees in their favour, on the average. If I were to build walls for their proper culture, I would have a sure provision for artificial warmth, when I chose to apply it, and this would be from the moment the very first blossom opened until the fruits were as large as small ripe Cherries, about the third week in May. I would then cease during a period of warm weather, and resume them occasionally through June, or even July, during fits of unseasonable weather. Great care will be requisite to watch the development of the caterpillars, the produce mostly of the *Red-bar* moth; these are almost sure to appear when the foliage is fully expanded; they must be collected by picking—avoiding injury to the foliage. Attention will be also necessary as to rampant shoots; these do much injury to the trees, and are for the most part caused by over excitement through manurial matters. Such allowed to grow rampant, and to monopolise the juices of the tree, take the liberty of forming such capacious channels for the influx of sap, that other and inferior portions are robbed, and occasionally a kind of constriction takes place, and the older portion dies, probably of sheer inanition. This I take to be the cause, in the main, of the dying off of boughs in the Apricot; and what is this, more or less, than self-pruning?

I am well assured that the stock, on which the Apricot is budded, is not thoroughly suited to its habits; and it is much to be wondered at, that something better has not been discovered: had the thorough investigation of this subject been a profitable speculation, such would have been discovered long since.

In Cherries, the blossom appears unusually strong this spring, as also in Plums; the latter in these parts are a complete garland. I, therefore, anticipate a splendid fruit season, principally, however, on account of the lateness of the blossoms, and partially through the very complete ripeness of the wood in general of fruit trees; and which the last genial summer carried out in first-rate style. It is too soon yet to guess concerning Apples; they are with us unusually late; but one remark I would make—the fruits kept worse in the rooms than I ever knew them; or, at least, a greater proportion rotted. I think it may be affirmed, that nearly two-thirds of the whole stock were thus lost. Now, this was not simply my case, but universal in these

parts. This much, however, I may say, those which did keep were of very superior flavour.

Now, to what cause shall we attribute this disaster? To what, but the very warm summer. If this be the case, it simply shows that we may have too much of those elements we, in general, so much desire, for our more tender fruits, and for this there is no help; only the subject is worthy of a passing remark. We shall, doubtless, find sufficient compensation for such mishaps, in the fact that we shall be ultimately gainers by a more firm and fruitful habit induced in many tender fruits; as also improved qualities in the produce. Now, in such cases, I do not conceive that it is in any particularly high temperatures, for short periods, that such singularities consist, but in the aggregate amount of heat—taking the three chief summer months of July, August, and September; which, perhaps, more concern the welfare of tender fruit trees than any other. And here I would ask practical men, of a half-century's standing in particular, whether the springs are not in general later and more severe than in our younger days? Or, is it, that as we grow older, we grow more impatient? Let us refer to certain flowers for a clue to the mystery. I will point to the *Mezereon*, the *Primula* family, and in early bulbs, to such things as the old starch *Hyacinth* or *Muscari*, the *Dog's-tooth* or *Erythronium*, the *Hepatica*, and sundry other such little early visitors which used to take time by the forelock; but of late years seem to take it much more easy than in former days, or, at least, to take a longer nap. I have known many of these things in blossom early in March, but now, April the 26th, they are, for the most part, just beginning to open.

These, and several other flowers or plants, have been with us later, on the average for several years, and, with the fruits, would seem to prove that our springs are somewhat later. Now, I do not think that this is so much owing to a lowered temperature on the average, but principally to occasional severe frosts at unusually late periods; these tend to arrest the first growth, and to bring on a kind of temporary torpidity, during which time is lost. Such depressions occurring suddenly after exciting periods, doubtless exercise an ungenial influence over our tender fruits, by deranging for awhile that reciprocity between root and branch, on which, in the main, the welfare of fruit trees may be said to depend, to say little about the actual damage to the blossoms.

Whilst on the subject of fruits, I am reminded that some inquirer, a few numbers back, desired to know how to make an artificial loam; a remark consequent on my advices as to soil, surface-dressings, &c. I very much fear, that with all our boasted advances, we should find it a difficult affair to make that in an hour, which Nature requires, perhaps, generations to effect.

And what is loam, but a mixture of the clayey principle, sand, organic matter, lime, and of some other little affairs, a trace blended and incorporated in the most homogeneous manner? But the proportions are an important consideration: a preponderance of the clayey principle constitutes an adhesive or strong loam, of the sandy principle the reverse. If any one wishes to try his hand at it, I would suggest the following:—Take three barrowsful of nice clay, dry it thoroughly, and powder it fine as magnesia. Then add two barrows of sand, the finer the better, mixing it most thoroughly by several turnings with the clay. Add one barrow of fresh slacked lime, and give another turn or two.

Here we have the inorganic materials chiefly, and now let us add the organic together, with certain gaseous matters which they contain. Take two barrows of half-decayed leaf soil, and thump it fine, and obtain

a barrowful of dried horse droppings; these rub to pieces through a sieve. Finally, add the latter two; and lastly, turn and mix the whole until it appears an uniform mass. If not used off hand, let it be kept dry until wanted.

Such is the mere "finger and thumb" mode by which I should manage the affair, for I fear even our celebrated chemists would prove but sorry hands at an artificial loam. It would be well, however, for the experimenter first to obtain a handful or two of good loam, and subject it to a water trial, stirring it well up in a vessel, and allowing it to subside. This will, at least, enable him to form some idea of the proportion the organic matter bears to the inorganic.

R. ERRINGTON.

THE CULTURE OF FERNS.

MANY correspondents are often asking for information how to proceed to grow Ferns. Such correspondents, I suppose, have not seen our first volumes, which contain very full information on the subject. For the sake of these new readers, and to give supplementary information, has become, therefore, necessary, for the cultivation of Ferns has increased tenfold.

To succeed in this branch of horticulture perfectly, it is necessary, or, at least, desirable, to cultivate them in a house adapted to their culture. We have, in these high days of culture, separate houses for Orchids, Heaths, Geraniums, Camellias, New Holland plants, &c., and, in addition to these, I now frequently meet with houses devoted to Ferns alone. I do not insist, however, upon this point as absolutely necessary; for Ferns will grow with other plants in tolerable perfection. Stove Ferns, for instance, grow well amongst Orchids, and stove plants generally; but they do not associate perfectly even with those heat-loving plants; therefore, it is better, where it is possible, to devote a house to them exclusively. There is this difference in Ferns, to most other large divisions of plants, the greenhouse and hardy species will thrive and grow magnificently in the highest temperature, producing fronds such as are never seen out of doors in a wild state. Bearing this accommodating fact in mind, the amateur need not fear placing his British Ferns in the same house as the species he may obtain from the Indies. He may cultivate, in one house, Ferns from every quarter of the globe, providing the heat is sufficient for the tropical species; for, though the natives of hot climates will not thrive well in a low temperature, the species from cold climates will flourish in a much higher heat than their native wilds.

In stating that the whole tribe of Ferns *may* be grown in one house, and in the same degree of temperature, I only mean, let it be understood, that the cultivator has only one house that he can spare for them. Some may have ample room for separate places for them—one for stove Ferns, another for greenhouse species, and a fernery out of doors for such as are perfectly hardy. In such a case, of course, the proper method to follow will be to grow them in those three groups. Some species of hardy Ferns, however, require a very peculiar treatment, of which I shall treat more particularly hereafter.

Ferns are distributed almost all over the globe. They are found in the hottest and the coldest climates. They grow on the highest mountains and in the morasses of the plains. Some even grow in water and others on barren rocks; whilst some few grow near waterfalls, loving to be bedewed constantly with the spray to keep them moist. I have even found some species growing luxuriantly within the mouths of old

wells. Yet all may, by a very slight adaptation, be cultivated in, comparatively speaking, a small space of the globe. This is a great encouragement to an ardent cultivator, who is desirous of growing a large collection of these curious and singularly beautiful plants. A good collection of Ferns, to a lover of plants, is as attractive and pleasing, if not more so, than any other tribe of plants, "always excepting Orchids," that I am acquainted with.

I have hinted above that Ferns may be divided popularly into three groups, relating to the temperature they require; that is, stove, greenhouse, and hardy. Under these divisions, then, I propose to give the culture for each group; and as the species that are hardy are such as can be most easily procured, either by collecting them from the native localities, or at a less price than the exotic species from the dealers, I will commence my remarks on their culture, first—

HARDY FERNS.

CULTURE IN POTS.—The species that are found in high situations, such, for instance, as the *Asplenium trichomanes*, should be well drained, and potted in sandy peat and loam, thoroughly mixed with broken potsherds, or small stones—limestone is the best. Whilst those which grow in damp places, such as *Osmunda regalis*, should be potted in strong loam. Others that are found in shady woods, or banks, should have a free admixture of leaf mould, not too much decayed, added to the compost. The moisture-loving species should be plunged behind a wall, or low hedge, on the north side; the others require a free exposure to the sun; but the pots should always be plunged, to protect the roots from the burning rays of the sun. They should be repotted every year, in the spring, and be supplied with water as they require it. The size of the pots must be in proportion to the size of the plants. The *Osmunda regalis*, for instance, will require, when a good size, pots from ten to twelve inches diameter; whilst the small species, such as *Allosorus crispus*, will seldom need a pot more than six inches wide, even for the largest specimens.

In the situation I have mentioned these hardy Ferns may remain all the year; but where there is that convenience I would recommend them to be removed into a cold pit, or frame. In woods they are sheltered by the fallen leaves, or low shrubs; and the removing them into a winter shelter is a similar protection to them from the severe winter's frost, and heavy snows or rains.

The *Trichomanes speciosa* is, undoubtedly, a hardy Fern, but it grows near waterfalls; and to grow it in the open air, in pots, it should be planted in a wide, shallow pan, placed in the shade, covered with a bell or handglass, and kept sprinkled with water every day during the spring, summer, and autumn months. The Tunbridge Wells Fern (*Hymenophyllum Tunbridgense*) requires a similar treatment.

CULTURE IN A FERNERY.—A situation for a fernery should be chosen in a retired spot, and should be formed by throwing up a mound of earth, and facing it on both sides with rocks and roots of trees; or two banks of earth, faced similarly, and facing each other, with a walk between, would answer admirably. One bank should face the north, and the other the south. On the north side, near the base, the moisture-loving species should be planted, and higher up on the bank such as love shade. On the south bank, plant towards the base all that grow on hedge banks; and towards the top, such species as inhabit mountainous rocks, old walls, &c. By these judicious arrangements, nearly the whole hardy species may be grown successfully in a comparatively-speaking small space of ground. Suitable soils for each species must be put

in for them. The dead fronds should be allowed to remain through the winter, to protect the roots from the frost. In the spring, cut them all away, and make the fernery neat, adding a little fresh soil around the plants.

T. APPLEBY.

(To be continued.)

MEETING OF THE BRITISH POMOLOGICAL SOCIETY.

A Meeting of the BRITISH POMOLOGICAL SOCIETY was held on Thursday, the 6th instant, at the rooms in St. Martin's Hall, Long Acre, ROBERT HOGG, Esq., VICE-PRESIDENT, in the chair.

This was the day appointed for competing for the prize of ONE POUND, offered by Mr. SPENCER, of Bowood, for the best Seedling Kitchen Apple, if the variety exhibited should be considered by the Meeting worthy of such distinction. There was a good exhibition of late Apples, several of which were Seedlings, and many varieties without name, sent for identification.

Dr. DAVIES, of Pershore, sent a fine large Apple, which he stated was a Seedling, and named by him TALIESIN. It is above the medium size, and almost entirely covered with dark red, except in patches where it had been shaded, and then it is greenish yellow. It bears a very close resemblance to the *Norfolk Beefing* externally; its flesh is yellowish, firm, crisp, and very juicy, with that fine, brisk, and grateful acidity that characterises the *Norfolk Beefing*. It was, at first, thought to be identical with that variety, but on comparison with it, the flavour was thought to be more acid. Before coming to a decision on the subject, it was arranged that application be made to Dr. Davies for some particulars as to its origin; the habit and vigour of the tree, and such other information as would assist the Meeting to come to a more satisfactory conclusion on the subject.

Rev. GEORGE JEANS, Alford Vicarage, Lincolnshire, sent a Seedling Apple, raised from the *Hollow-crowned Pippin*, which was about the middle size, of a round shape, and green colour, with some markings of *Russet*. The flesh is firm, crisp, and very juicy, with a fine, sprightly, sorrel-like acid. This and the preceding were considered the two best varieties exhibited; both were equal in merit, but *Taliesin* being considerably larger in size than this, it was considered the best adapted for cultivation. It remains, however, to be decided, how the prize will be awarded, till after the information, necessary to satisfy the Society, is obtained from Dr. Davies.

Mr. JAMES MILLER, Litchford Hall, Blackley, near Manchester, sent four varieties of Seedlings, the flavour of all of which was destroyed, from being packed in sawdust. Nos. 1, 2, and 4 were past, and had become mealy; but No. 3, a *Russet* of small size, was agreeably acid, and, doubtless, a good baking Apple, but not large enough.

Rev. JOHN BRAMFALL, of St. John's Vicarage, King's Lynn, sent a dish of a very excellent dessert Apple, called CLISSOLD'S SEEDLING, or *Longmore Nonpareil*. It was raised some twenty-five years ago by Mr. Clissold, a nurseryman at Strood. Though so late in the season, those exhibited were in excellent condition, and their flavour remarkably fine. The tree is said to be hardy, and a good bearer. This is a variety which ought to be better known, and one which is worthy of an extensive cultivation as a late dessert fruit. Its flavour quite reminds one of a very fine *Sturmer Pippin*. Being a dessert variety, it could not compete for the premium offered for the Seedling Kitchen Apple.

An Apple was sent by Mr. William Shann, gardener

to Lady Russell, Swallowfield Park, Berks, which had been gathered in October, 1856—a year and seven months ago! which proved to be the FRENCH CRAB, or WINTER GREENING, as it is sometimes called.

Mr. Rivers, of Sawbridgeworth, had specimens of some late Pears. LEON LE CLERC DE LAVAL, grown against a west wall, was half-melting, juicy, and with an agreeable aroma. BEURRE BRETONNEAU was not so good, and neither of them desirable. From all we have yet seen, we conclude that a dessert Pear for the month of May has yet to be raised.

FLORISTS' FLOWERS.

THE HOLLYHOCK.

Now that the frosts are, or at least are expected to be over, the grower may safely plant out his Hollyhocks. They require ground deeply dug, and well enriched with manure. A dry bottom is almost indispensable, if not so naturally; it should be well drained, and the plants should be placed on little hillocks, to keep the collar of each plant quite dry. Seedlings should be pricked out in large pans, and when of a sufficient size, planted out in nursery rows, two feet apart, and a foot from plant to plant.

Mr. Paul, of Cheshunt, was fortunate last season in raising some very superior varieties, which every grower for exhibition ought to possess.

TWELVE SELECTED NEW VARIETIES.

Celestial (Paul), a clear delicate blush. Good form and close spike.

Crusader (Paul), bright pink. Good form and substance; close compact spike, and even-edged bloom.

El Dorado (Paul), bright yellow; large and smooth. Good form and close spike.

Lady Franklin (Paul), deep pink. Good form and substance; close and smooth.

Lady Palmerston (Paul), peach-blossom colour; large flower, smooth spike. Very dense.

Lady Tarleton (Paul), pearly-flesh colour; white edges; large, smooth, and a close spike.

Lady Willoughby d'Eresby (Paul), rich cream colour; smooth and dense; good spike. Guard petals very fine.

Maid of Athens (Paul), blush and puce colours; clear and distinct. Good and novel.

Princess Royal (Paul), red edges, cream-colour flowers; close and good shape; spike excellent. Quite distinct and novel.

Queen of Whites (Paul), the purest of all whites; large flower and fine spike.

Sir Colin Campbell (Paul), scarlet crimson; large, smooth, and a noble spike.

Walden Masterpiece (Chater), lemon, shaded with pink, close spike, and smooth large blooms.—7s. 6d. to 10s. 6d. each.

TWELVE SELECTED OLDER VARIETIES.

Beauty of Beechwood (Downie and Laird), rosy crimson.

Beauty of Cheshunt (Paul), light rosy red.

Brilliant (Paul), shining crimson.

Canary (Chater), light yellow.

Diana (Paul), rosy peach.

Glory (Paul), glowing rosy scarlet.

Golden Nugget (Bircham), deep orange yellow.

Honourable Mrs. Ashley (Roake), lilac peach.

Juno (Paul), silvery peach. Very distinct.

Leonice (Roake), crimson scarlet.

Mrs. Oakes (Bircham), delicate shaded salmon.

* *Pourpre de Tyne* (Bircham), rich purple.—T. APPLEBY.

CRYSTAL PALACE.

WE extract the following from the programme of the coming season:—

"FLOWER SHOWS.

"The Crystal Palace is admitted by all to be unrivalled in its capabilities for the display of flowers, with advantage to

the growers and convenience to the public. Not only is the space at command quite unequalled, but no place offers the same advantage of being equally enjoyable, whatever may be the state of the weather.

"These advantages are attested by the large numbers of distinguished visitors who have attended the Shows, and by the increase in the number of competitors for the prizes.

"It will be the aim of the Directors to render these *fêtes*—so characteristic of, and appropriate to, the Palace—even more attractive to the season ticket-holders and the upper classes of the visitors, than they have hitherto proved; and, at the same time, to afford an opportunity to many who are commonly debarred from these exhibitions by their high prices, of witnessing the peculiar beauties of a Flower Show in the Crystal Palace.

"With these views, they have determined on holding three Grand Horticultural and Floricultural Fêtes during the present season:—

"The first, on Saturday, the 22nd of May. Admission, 7s. 6d.

"The second, on Wednesday, the 16th, and Thursday, the 17th of June. Admission, 7s. 6d. and 2s. 6d., respectively.

"And the third, on Wednesday, the 8th, and Thursday, the 9th of September. Admission, 2s. 6d. and 1s., respectively.

"It is gratifying to find that the prizes offered to amateurs and cottagers at the September Show of last year were all competed for, and that the flowers and fruits exhibited showed a marked improvement over the former occasion. Encouraged by this improvement, the Directors have resolved to offer similar prizes at the September Show of this season.

"Schedules of prizes for the Flower Shows may be had on application."

"POULTRY AND OTHER SHOWS.

"There will be two Exhibitions of Poultry in the course of the present season. The Summer Show will be held on the 7th, 9th, 10th, and 11th of August; and the Winter Show will be held on the 8th, 10th, 11th, and 12th of January, 1859. The last Exhibition was admitted by all competent judges to have been the most perfect hitherto held in this country, and the Directors are encouraged to find that there is likely to be a still further improvement in future. The schedule of prizes and copies of the regulations at the Summer Show are now ready.

"Proposals have been made for a large Show of singing and other fancy birds in the Tropical Department, towards the close of the present year. The Crystal Palace affords peculiar facilities for a variety of pleasing and interesting exhibitions of this character, and the Directors are prepared to offer inducements for the carrying out of this and similar undertakings, which may be so organised as not to interfere with the ordinary arrangements of the Palace."

THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.

By P. V. M. F.

(Continued from page 71.)

HOW TO GIVE BEES ADDITIONAL ROOM.—Now if you shift your hives in the way I advise, although you will get no more swarms, you will get a vast deal of honey, because there will be so many more bees to collect it in each hive. You must take care, therefore, to give them *plenty of room*, especially in good seasons. This is one reason why I advise you to use large hives; as your swarms, managed on my plan, will generally come in May, or very early in June, they must have plenty of room to work, and store their honey in. It will sometimes happen in good years, that even these large hives will not be large enough for the wants of the bees. They will require more room; but how is this to be given? In Scotland, and in many parts of England, they add to the hives what are called *ekes*. These are hoops of straw, about as wide across as the hives themselves; these ekes they set under the hives, so as to lift them up two or three inches. This, no doubt, gives much useful space to the bees, with very little

trouble, and they will thank you much for it; but the new comb always get black here at the bottom of the hive. Besides, if it is easy to *give* an eke, it is troublesome, and sometimes injurious to the hive, to *take* it away. It is much better to give additional room at the top, and not at the bottom, of a hive; for here the new-made comb is always clean, and the bees prefer to store their honey above than below. It is for this I told you to have a good-sized hole at the crown of your hives. You may easily cut one with a sharp knife, even when the hive is full of bees; if you do it gently, they will not disturb you; you may then cover it with a *small* hive or box. Here, if they want room, the bees will soon make comb, and store it with the most beautiful honey you ever saw: this honey will often sell for 2s. per lb. in the London market. Your hives, you see, ought to be as *flat* as possible, for these small hives to rest upon conveniently. Bees will sometimes fill two or more of these small hives, if not too large, in a good season, but only when they are *very strong in numbers*. They ought to be put over the stocks or swarms about a fortnight after the swarm was hived—later or earlier according to the prosperity of the hive, and the goodness of the season. The small hive or box must be protected from sun and rain, by putting a larger hive with a hackle over all. It is a good plan, also, to stick a bit of comb in the small hive; it will tempt the bees to work much sooner than they otherwise would, especially if it be smeared with a little honey or sugar.

HOW TO TAKE A SMALL HIVE, OR BOX OF HONEY, FROM THE TOP OF A STOCK.—When full, these small hives can be very easily taken off, without destroying the lives of the bees. Choose a fine day, without wind, soon after the middle of July—earlier if the hive is full, but not later. Do it when the bees are mostly abroad, and the sun shines brightly. Pass a knife first under the edges of the small hive, to separate it from the lower hive; then try gently if it will come off easily; if not, you may be sure the comb is fastened to the floor; you must, therefore, pass your knife completely under the hive which you wish to take off. Now put a bung in the hole at the top of the lower hive, and remove your small hive to some shady place, under a currant bush, or laurel hedge, not far off. You may put it on the ground upon a couple of small sticks, as thick as one of your fingers; then put a large hive or box over all, and cover it over with a cloth. Leave it so for half an hour, then lift the covering hive a few inches on one side, and you will see a great rush of bees, all anxious to escape. This will continue till there is scarcely a bee left in the small hive or box; if, however, as happens sometimes, the queen is among them, they will not escape in this way; some few will, but the greater number will remain. If you see this, you must take the bung out of the old hive again, and replace the small hive on the top of it. Leave it for a day or two, and try again in the same way. Sometimes too there will be *brood* in the little hive; if only a little, it does not matter; but if there is a great deal, you had better put it back again, and wait a fortnight before you take the honey. When at last you have taken away the small hive, be sure to close up the hole in the stock, and to cover it well over with its old pan or hackle, and make everything snug for winter, if you intend to keep your hives till you have a good number of them, as I advise.

(To be continued.)

NEW PALM HOUSE AT EDINBURGH.—The fine Botanic Garden at Edinburgh has just had its attractions enhanced by the opening of a new Palm house. It is a spacious and elegant structure, and has been erected at a cost to Government of about £6,400. The former Palm house, built about twenty-five years ago, has been retained as an adjunct to the new one. The old building, raised in 1833, is octagonal in form, with a breadth on all sides of from fifty to sixty feet, and the new one, into which it opens on one side, is an oblong of one hundred feet by about seventy. In addition to the enlarged space thereby obtained is the advantage gained by the way of height, the new building being seventy-two feet high, and the old one only forty-two. The new Palm house consists of a massive stone structure, thirty-five feet high, with tall arched windows on every side, and upon the masonry rests a double stage oblong dome of glass and iron, with iron galleries running inside and outside both its stages. The style and propor-

tions of the edifice give it both a spacious appearance from within and a commanding aspect from without. The Palms, formerly crowded and almost packed together in the older building, have now been distributed over both. Many of the taller ones have, from time to time, had to be pruned and cropped to save the roof, but in the new building they will have the amplest limits. The Edinburgh Botanic Garden is, probably, the oldest in the country, having been established in 1670, originally in the centre of the present city; and after successive removals, it was established in its present picturesque situation at Inverleith, in 1822. The cultivation of the Palm was an early object of interest in the garden, and some of the fine Palms decorating the new building were brought from the old garden at Leith Walk. About two and a half imperial acres of beautifully-wooded ground will shortly be added to the garden on the west side, making its whole area seventeen acres. It is also in view to unite with it the garden of the Caledonian Horticultural Society immediately adjacent, and to use the latter as an arboretum. The Professor of Botany of Edinburgh University teaches a class of about 200 pupils annually in the garden and museum, and for a series of years nearly 40,000 persons have annually visited the garden. Application is being made to Government, for an addition to the present allowance to the establishment, which was fixed in 1833 at £1000 a year, since which date the museum has been opened, the hothouses extended, and the new Palm house built, it being found that, without an increased grant, it is impossible either to maintain the establishment creditably and efficiently, or to complete the present improvements.

ADENOSTOMA FASCICULATA.

RAISED from seeds collected in California, by Hartweg.

A small Heath-like bush, with erect weak branches. Leaves linear, sharp pointed, concavo-convex, arising in fascicles from the axil of primordial leaves of the same form, but dying early and leaving behind a pair of spine-pointed stipules; in this arrangement they may be compared to Berberies and similar plants. Flowers white, small, in terminal panicles, with much the appearance of the Alpine Spiræa. The leaves of the cultivated plant continually evince a tendency to become two or three-lobed near the point. It is said to grow two feet high, in open exposed places near Monterey.

In point of beauty, it is inferior to the worst of the Spiræas, and it is a mere botanical curiosity. Whether it is hardy or not has not been at present ascertained. — (*Horticultural Society's Journal*.)



IRIS PUMILA.

A FEW days after the Horticultural Society's Exhibition at St. James's Hall, Mr. Rivers sent me an Iris in flower, and he asked me to "decide a dispute, to say if the enclosed is the Crimean Iris, or is of the same race." It was exactly the same kind as the one which attracted her Majesty's attention at St. James's Hall, and the Horticultural Society called it *Iris pumila*, which might have caused the said dispute. It

was only one form of six or seven variations of size and colour which *Iris pumila* assumes, in different parts of central Europe, and through Taurida to the Caucasus.

The normal type of the species, in our gardens, is a purplish-blue flower, common enough among our spring flowers; the Crimean variety of it has a pale yellow flower, and there is a white form of it; also a lilac and a pale lilac, and other shades, but they all agree in having a bearded flower and a one-flowered scape.

Mr. Rivers tells me, after the dispute was decided, that he has barrow loads of Crimean Irises, and other spring flowers, but he never offers them for sale; "but he would give me enough to break my back, for the Experimental, if I would only run down and fetch them." Much obliged was I, but having had a sufficient experiment on my back already with the lumbago, I should be loath to risk it on again under a load of spring flowers, or bedding plants; still I should much enjoy a handling of "auld world plants" for the Experimental, after flowering those beautiful *Iberis unifolia* and *Alyssum Gemonense*, which Mr. Rivers sent me last winter with the new hardy Grapes. These are now in full bloom with me, and most beautiful things they are.—D. BEATON.

NOTES FROM THE CONTINENT—No. 22.

GARDEN GOSSIP—BERLIN.

"'Tis an ill wind that blows nobody good," says an English proverb; and as a proof of this old saw, which needs no proving, I shall show that the gardening world is the better for the Revolution of '48. There were two Jews here, who—when that revolutionary epidemic swept over the Continent, carrying desolation, carnage, and woe wherever it went—spent every penny they had, in buying railway shares and stock, when the money market was at its lowest ebb; and, as a natural consequence, when more peaceful times came, these canny men found themselves as rich as Hebrews proverbially are. They very wisely employed part of their capital in keeping up good gardens, and the horticultural establishments of the Messrs. Reichenheim, at Nos. 19 and 33, Theirgarten Strasse, are in this part of the world quite celebrated. Though presenting no features which would astonish an Englishman, they are yet very pretty places, and no excursionist, interested in such matters, should visit Berlin without seeing them. The one at No. 33 is the best, though both have good collections of Orchids in the most perfect health, and evidently under the best of management. A little glass box, on the front stage of one of the Orchid houses at this garden, contained some pet plants, which were perfect models. First, there were five or six species of *Ænecochilus*, with their gold or silver-veined velvety leaves; then a pan covered with *Sonerila margaritacea*, with its pearl-dotted leaves and spikes of crimson flowers; *Begonia Thwaitesii*, the foliage of which is densely covered with purplish-brown hairs; *B. albo-plagiata* somewhat similar, but its hirsute covering almost white; and *B. splendida*, a most gorgeous plant, the young leaves and leaf stalks like bright crimson velvet. Then there was also a fine plant of the interesting Venus's Fly-trap (*Dionæa muscipula*), well grown in chopped moss and sand, the pot standing in a shallow saucer of water; and the no less interesting Australian Pitcher Plant (*Cephalotis folliculotis*).

In an English garden of such pretensions as this, one of the principal features would be the forcing department, but here it holds a very subordinate place. Pines are not grown at all, although house after house is filled with Orchids. The fruit trees in the open garden, and the wall trees, are anything but what might be expected; indeed, they are everywhere in this neighbourhood much neglected.

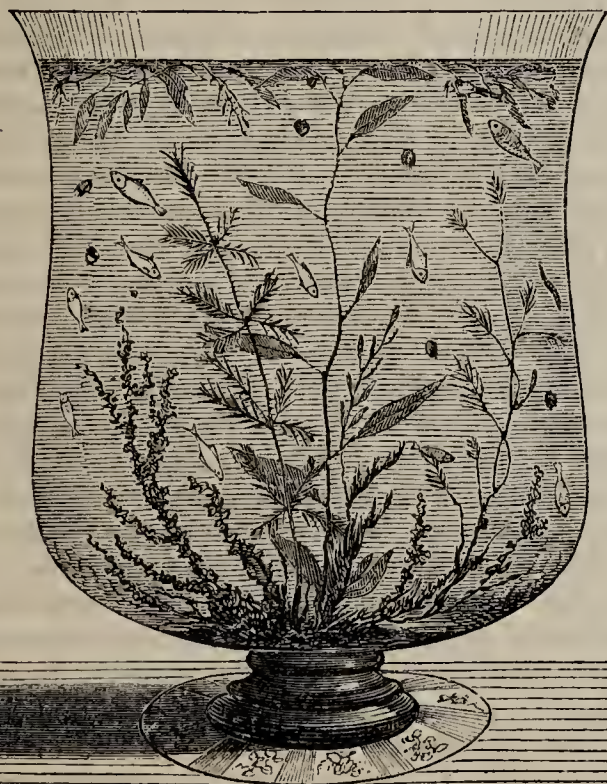
At No. 19, the Orchids (upon which I cannot send any notes that will be new to your readers) again form the principal feature. There is also a collection of Pitcher Plants most beautifully cultivated. *Nepenthes Phyllamphora*, with a perfect nest of Pitchers clustering at the base of the stem, and lying upon the surface of the soil. In a greenhouse, among choice Conifers, Camellias, &c., were some fine specimens of Linden's Aralias, subdivided into the genera *Panax*, *Oreopanax*, *Didymopanax*, &c.; but all of them most beautiful foliage plants for a cool house while young. If allowed to

become too large, they lose much of their beauty. I shall speak of them more fully on another occasion.

The botanically-inclined visitor to Berlin should not fail to get a sight of another garden—that of Herr Decker, the principal printer and publisher of the city. It is a kind of private nursery, for he receives the seeds and plants collected by a German traveller (Dr. Karston), in tropical America, and raises them for sale. From these importations are many rare plants, particularly in the way of Palms. Among them is *Chamædorea graminifolia*, the most elegant of all the family, its long narrow-pinnate leaves and drooping flower-stems rendering it well worthy of a place among the most select of foliage plants. Then there is the very rare and beautiful small-fruited Ivory-nut Palm (*Phytelephas microcarpa*), *Deckeria Corneto*, one of the tallest trees known; various species of *Kloptockia*, *Cenocarpus*, &c.: indeed, the houses are perfectly crowded with rare plants. One greenhouse looked very gay in summer with the orange-scarlet *Tropæolum tricolor*, the yellow *T. brachyceras*, and the blue *T. cærulea*, hanging in festoons from the rafters; while the stages were covered with different varieties of *Achimenes*, *Gloxinias*, *Gesneras*, *Oxalis Bowei*, and *O. floribunda*, all flowering freely.

Some of your correspondents have, I see, been detailing the results of the excessively hot summer we had last year. The most singular thing here was that it caused several old plants of *Dasyllirion acrotrichum* to flower. This has been cultivated for many years, but was never known to bloom before; while last summer I heard of no fewer than ten plants throwing up their flower-spikes; all were, I believe, male plants. This *Dasyllirion* throws out from the top of a short stem a mass of long narrow leaves, which droop gracefully all round; from the centre rises the flower-stem, from ten to eighteen feet high: this grows very rapidly; one, which I measured, as much as nine inches in the twenty-four hours. The upper portion was covered with inconspicuous, catkin-like clusters of male flowers. It is a Mexican plant.—KARL.

THE FRESH WATER AQUARIUM.



A FRESH water aquarium is now within the reach of high or low, rich or poor; and a more beautiful ornament for the sitting-room, blending recreation with instruction, has never yet been brought into public notice.

During the last two winters the writer has been entirely confined to the house; so, unable to enjoy the variety of external nature, the world of the aquavivarium became its substitute. Observations on the manners and customs of its inhabitants, the beauty of its evergreen vegetation, its changing scenery, and its microscopical wonders, have presented attractions which seem still as inexhaustible as ever, constituting

powerful witnesses of the Divinity of their Maker. And all this with the minimum of attention an invalid can bestow; for the balance of vegetable and animal life being never interrupted, the water remained pure and bright from the first.

If we take a jar of water and place therein a fish, we shall find that, ere long, it will come to the surface gasping and panting; if still left to itself, suffocation would soon put an end to its existence. Such is the fate of the many hundreds of sticklebacks yearly caught by juvenile anglers. They are carried home in triumph, two days afterwards their carcasses are thrown on the ash-heap, or found floating amid prismatic films on the surface of the water-butt. But the lives of the fish might have been preserved had our juvenile friend taken home but three specimens; placing a sprig or two of the common pond Star Weed (*Callitriche*) in his bottle. The existence of his captives would have been prolonged, and the pleasure of their youthful owner enhanced, as every other day he dropped in a few crumbs of hard biseuit, or a tiny worm, and enjoyed the scramble which was sure to follow.

This principle of mutual accommodation was carried into practice by Dr. Lankaster, in 1849, and explained to the Chemist's Society, by Mr. Warrington, in 1850.

When placed in the direct rays of the sun, any growing water plant will be soon found covered with minute bubbles, which will eventually be seen rising in rows to the surface. Now, these globules consist of pure OXYGEN—the vital air so necessary to the existence of the animal creation. Without a proper proportion of oxygen, we should languish and die; but God has wisely ordered it, that vegetable life should provide this valuable gas, at the same time seizing on noxious vapours, and transforming them into green tissue and leaf. So in the world of water, the poisonous carbonic acid given off by fishes and insects is taken up by the water plants, and converted by them into waving bannerets, or delicately-feathered foliage, which, in their turn, are continually furnishing the air of vitality to their benefactors. With this mutual assistance, the aquarium would alone be self-supporting; but further provision has been prepared as an extra support to this natural circle.

The microscope has lately brought under notice a species of minute locomotive plants which (like the new sect of Angelites) eat nothing at all, but live on carbonic acid and ammonia absorbed from the water. Being continually on the move, they are most valuable assistants for extracting foul gases. Wherever they go, they can never be said to make a useless journey.

The water snail (*Planorbis corneus*), too, must not be forgotten, for he is one of the chief officers of our Board of Health. He is too vigilant to suffer any decaying matter to remain long in one particular place, and is to be seen almost always active, mowing off unnecessary confervoid growths, or clearing away nuisances in a style certain "Boards of Talk" would do well to imitate.

Here, then, is the *rationale* of the fresh water tank.

The fish gives off carbonic acid. This carbonic acid is taken up by the plants, which appropriate the carbon, and give off oxygen, which the fish consume.

In stocking our aquary, then, we must always provide a supply of oxygen more than adequate to the wants of the fish to be introduced, sufficient vegetation to absorb all foul gases, and to keep the water pure and clear.

After long observation, the writer finds the following proportions of vegetable and animal life the most desirable for the production of a self-sustaining parlour collection.

For each gallon of water—two healthy plants, and three fish (*no specimen to exceed two inches and a half in length*).

The great mistake of the present day is, to cram large and unwieldy creatures into aquaria of but moderate dimensions; consequently, they look miserably unnatural, and, consuming as they do, a large quantity of oxygen, a periodical renewing of the water is necessitated. Small fish, on the contrary, are lively in their movements, and far more interesting. Soon they make themselves quite at home, and show by their gambols and fishy antics that they are happy and comfortable. In my next I shall (D.V.) notice the construction of fresh water tanks.—E. A. COPLAND.

QUERIES AND ANSWERS.

STOPPING AND SYRINGING VINES.

We are asked by A. M. "If the leading shoot of the Vine should be stopped when you intend growing it on spurs the following year? Also, whether they should be syringed every night and morning after they burst the bud, and on until they blossom, and commence again when the blossoms are off?"

[If the leading shoot is coming away strong, we would merely remove all tendrils, and allow it to reach the top of the house before the point or terminal bud is pinched out. Long before it reached the half of that length, laterals would be coming freely from each joint, and these should be stopped at the first or second joint, just as you have room to spare. Other things being in proportion, the larger the space you can give to the main leaf at each of these joints, and the more room to the leaf or leaves from these secondary shoots, or laterals, the stronger and bulkier will be the main shoot or stem. So long as size of stem is the object, these laterals must be encouraged, but a time will come, when the thorough ripening of the wood, and the swelling of the main buds, will be more important than mere size, and then towards autumn, as shown in previous articles, these laterals will have to be removed gradually, so that more direct sun and air may play on the wood and the principal foliage. It will thus be seen, that we advise encouraging these laterals at first, for promoting size or bulk in the stem, and gradually removing them afterwards, to secure ripeness and maturity of wood.

On the same principle, if, notwithstanding the supposed strength existing in a Vine, the leading shoot should come away spindling and weak, and show little disposition to throw out laterals, we would advise stopping that weak shoot, when three or four feet in length, and, also, preventing any great extension as to growing in the Vine in any other part, and the consequences, probably, would be, that laterals would be freely thrown out, the growth of which would add strength to the stem, whilst some of the buds near the stopped part would be likely to start into growth; from one of which, or from a very strong lateral near the point, a fresh leader could be selected. We prefer a shoot from a main bud, if obtainable, in a good position, and equally strong. The advantage derived from this treatment, is the securing of the greatest strength to the base of your leading shoot. Without such treatment, when a leading shoot starts weakly, and yet you have reason to believe there is enough of strength in the Vine, you will be apt to have your best wood and plumpest eyes at the top of the house, which, according to your system, you will feel compelled to remove at the winter pruning. When I used to grow Vines in pots, I frequently stopped the shoots in the above manner, in order that the part next the pot should be the strongest, and also the best matured.

The syringing affair is chiefly a matter of taste and convenience. Most people use the syringe pretty freely whilst the buds are swelling, and until the bunches come into bloom, and many begin to syringe night and morning, after the fruit is fairly set, until it commences to change colour, and have no reason to find fault with their system. One great plea in favour of such treatment is, that it helps to keep those annoying pests, thrips and red spider, at bay, and more especially when many other things besides Grapes are congregated in a vinery. One thing the adopters of such a system ought to be thoroughly sure of—the clearness and purity of the water, or they may get their best Grapes covered with a sediment. Being unable to satisfy myself in the matter of water, I give the Grapes a good syringing after they are fairly set, and seldom, or never, repeat it again that season. For black Grapes especially, no water is worse for syringing than that which comes through chalk or lime. However clear, apparently, such water, if the smallest portion of lime is held in solution, it is apt to be deposited as a film of chalk on the berries, from the combination effected with the carbonic acid in the atmosphere, just as a pellicle of chalk is formed on the tub of water, into which a day or two previously you had thrown a spadeful of lime. When, from such causes, syringing is discontinued after the fruit is fairly set, and swelling, the walls, floor, and pathway should be frequently sprinkled,

especially in bright sunny weather. That will help to keep the spider, &c., at a distance; and this will be still more effectually secured by adopting Mr. Errington's most excellent and simple method, of painting the parts of the wall on which the sun's rays are likely to rest, with a paint of water and flowers of sulphur. Painting the heating medium with a thin mixture of the same, will also be useful; but you must get to a safe distance from the furnace; in other words, the surface so painted should rarely exceed 140° to 150°. By keeping the house thus moist, the points of the leaves will often be loaded with dew drops in a morning. I lately heard a discussion as to the electrical, galvanic, physiological, vital forces, that produced such a phenomenon, as these drops, suspended at these points. Is there a reader of this work who could not give a simpler solution?—R. FISH.]

BARBAROSSA GRAPE NOT FRUITING IN A GREENHOUSE.

"In a small greenhouse, heated occasionally by an Arnott's stove, I have a *Barbarossa* Vine, which has now been planted three years; and, last autumn, having ripened wood of the size and colour of an ordinary walking-stick, I made sure of fruit this spring; but, although the rods have broken well from every eye, I cannot perceive a single bunch. Four other varieties, planted at the same time, have each a fair quantum.

"I beg to inquire if *Black Barbarossa* requires any particular treatment, and how short the laterals should be stopped under the circumstances?"

"Are you acquainted with a variety of Grape, which I see advertised with a high character, under the name of the *Black Champion*?"—AN OLD SUBSCRIBER.

[We much fear that you are not the only one that has been disappointed. Our own observation leads us to conclude that, in general, the *Barbarossa* is not suited for late cool houses, such as a greenhouse. The best crops we have seen were in houses forced moderately early, so that more heat and continued sunlight were afforded to the ripening alike of fruit and wood. So far as we have found, it requires more time for such purposes than even a *Muscat*. When first we fruited it, it was in a late house, along with *Hamburgs*, *Muscats*, &c.; but it was the last to ripen. When young, and not extra vigorous, it showed pretty well; chiefly, we imagine, that, in such circumstances, the wood was better ripened. Last season a strong Vine showed so little, that we cut it down nearly to the bottom, allowing one of the lower shoots to become the leader, which it did to the tune of something like our correspondent's walking-stick, and it seemed as hard and firm as a piece of Oak. We left that rod for more than half its length; every bud broke strongly, not one missed; but not a bunch was there on the whole, though other contiguous Vines had two, three, and more bunches to each shoot. Influenced by high authority, and our own success whilst the Vine was young, we have recommended the *Barbarossa* for late houses. We could not do so now until the matter has been better ventilated, which this notice may help to do. Our present impression is, that it will succeed best when started early, because it will have more heat and sun to mature its wood. Without these adjuncts its vigour must be moderated by less root room, so that the sun in a late house may be able to mature the wood. In such a house as our correspondent's, we should be tempted to say, "Inarch the *Champion*, or the *Trentham*, or the *West St. Peter's*, upon it." If retained, and the spur system is adopted, allow the young shoots to grow right and left about two feet before stopping them, and then encourage a few laterals at least at the base of the shoots, to plump the buds and wood there. There is no question that the *Trentham* Grape is a good variety, but totally distinct from the *Champion*.]

CALCEOLARIAS TURNING YELLOW—CULTURE OF PURPLE LANTANA—SOIL FOR CLEMATISES.

"Some fine large plants of *Calceolaria*, which were very healthy, have suddenly turned quite yellow. On turning them out of the pots to examine them, the soil was found full of little *white* worms, or maggots, *like threads*. What is the

cause? and what remedy should be applied? Would salt, lime water, or soot, kill them? And could the other plants in the house be watered with anything which would destroy those worms, should they appear?

"What treatment is best for the purple Lantana?"

"What soil is suited to the *Clematis azurea*, and *Clematis montana*, *Sieboldii*, &c."—A SUBSCRIBER, Ireland.

[We hardly think that the *Calceolarias* turning yellow is entirely owing to the thread-like white worms, or maggots. We believe the presence of the latter is chiefly owing to using rank soil, or stuffing that soil with manure in an unsweetened state. Soil that has been in a stack for a twelvemonth is seldom troubled with such appearances of life, and neither is leaf mould, or very rotten dung that has been well aired. If there is danger of any such occurrence again, the soil and manuring agent adopted should be well heated, in an oven, or by the side of a fire, and exposed in the open air afterwards. One reason why charred turf makes such excellent compost for pot plants, is the security thus obtained that all eggs and larvæ of insects and creeping things are destroyed. Very likely, however, the yellowness of the *Calceolarias* is more owing to an extra quantity of manure in the soil, deficient drainage, and an inability in the plant, in dull weather, to throw off the usual amount of perspiration. A closeness in the atmosphere, in dull weather, would also help to produce this appearance, as well as to bring hosts of green fly. As remedies for the worms, you must not use salt, but clear lime and soot water will most likely settle them, and do good to the plants likewise. Put a shovelful of lime into a forty or fifty gallon barrel, and two shovelfuls of soot; work the latter into a paste first. In a day or two after filling with water, the liquid will be quite clear. If your plants are very yellow, use only half the quantity of lime and soot. At such strength no soft-wooded plants would be likely to be injured, but bettered by an application now and then.

There are so many purple *Lantanas*, that we do not know which you mean. Most of them, to be kept as evergreens in winter, require a warm greenhouse. All of them will keep alive in a deciduous character, and rather dry in a temperature ranging from 40° to 45° in winter, and will begin to bud as the temperature rises in spring. Of course they would be safer at from 45° to 50°. As soon as the buds break, and have grown a couple of inches, is the best time to repot them, shaking away a portion of the old soil. For young plants, the compost should be equal parts of heath soil and sandy fibry loam. Keep closer after potting, and syringe over head frequently, until growth is freely proceeding, when more air and a freer exposure to sun should be given. When these little side-shoots have grown two or three inches in length, and are slipped off close to the older stem with a sharp knife, and are inserted in sandy soil under a bellglass, and in a little bottom heat, they will generally make nice young plants in a fortnight. These young, and also the old plants, we presume, would grow and bloom, in most sheltered places, in the south of Ireland, out of doors, after the middle of June. If kept for in-door ornament, they would succeed well in a greenhouse; but, as the plants get old and large, they should be grown chiefly in strongish loam, to keep them stubby and shortjointed.

The *Clematis montana* will flourish in any common garden soil. *Azurea* and *Sieboldii* should, when young, have sandy loam and heath soil in about equal proportions. When established, common loam will suit them well. A little sandy leaf mould, or heath soil, gives such things a good starting: after that they can take care of themselves. Some wise folk just reverse this practice. A gardener lately killed all his glass Cauliflower plants, by watering them with a concentrated solution from stable cesspools. The plants might have stood it when they had leaves larger than modern parasols. "Why, my good fellow, you might just as well have stuck a lump of the richest fat pork into the mouth of a baby a day old!" "Now, dang it, what be you talking about? I was thinking of that all the time; it is just what nurse G. always does if she cannot get beef, or a lump of salmon, and her young *uns* always thrive. And sure, says I, if such food is good for young *uns*, why should not rich manurings be good for young Cauliflowers and other plants?" What more could be said? Many hundred plants are ruined by this mistaken fondness.—R. FISH.]

WINDOW GREENHOUSE.

"I have a lobby window facing the south, which I am anxious to convert into some sort of small greenhouse, at a small expense, and I am anxious for your advice as to how I should proceed in the matter. The window is seven feet high, three feet and a half wide, and glazed nearly to the floor. The window-sash is old, so I do not wish to use any part of it again, but I should be glad not to be obliged to pull away the easing of it. What I thought of doing, was to have a projection of, say three feet from the wall of the house, the size and shape of the window, and to have it come in on the lobby about eighteen inches, and close the front with a glass door. Do you think that this would answer, or could you suggest a better plan? How could I best support the floor of that part which projects?"

[In a window so situated, seven feet by nearly three feet and a half, you could grow many greenhouse and window plants, without any alteration whatever, by just having a stage or table, or tables, in front of it. Placing no value on the window, your best plan would be to construct a *bow window*, and then you would have morning and afternoon sun, as well as mid-day sun. If you objected to the greater width which this would imply, but still would wish to go out three feet, then part of the sides at least might be of glass, and would cost little more than wood. This making your greenhouse, as it were, outside the window, would involve some trouble and expense, as you would have to fix two strong wooden studs, or sleepers, through the wall, to support the floor, and the superstructure and these studs should also be braced with an iron rod. The nearest respectable carpenter, or bricklayer, would be able to advise you, and tell what the whole would cost. If you did so, and also brought the greenhouse into the lobby eighteen inches, it would be as well to have the floor of the little greenhouse on a level with the floor of the lobby. We presume you mean to have glass outside, and also a glass door, separating the little house from the lobby. The latter, for the sake of economy, might be dispensed with, and a curtain substituted, and that kept drawn when the plants were wanted to be looked at. We presume the lobby is heated, and then the plants in winter would have the advantage. If not, they will be at the mercy of the weather, unless you heat it artificially. We have known such a place kept quite genial, by a gas-pipe passing two or three times round it, from a gas-burner, in a working-room below it. Such a little place might be rendered very interesting with creepers up the sides, a hanging basket in the centre at top, and a stage and shelves below.]

LIQUID MANURE FOR GREENHOUSE PLANTS.

"There is a great deal said concerning the application of artificial manures, such as guano and sulphate, carbonate and nitrate of ammonia, to plants in a greenhouse. Will you write some directions upon this subject, stating the quantity of manure to be added to each gallon of water, and the benefit to be derived from the application?"—A. C.

[All artificial manures for pot plants should be used with great care. If used as the gardener used his Cauliflower, they had better be left alone. If *Calceolarias*, and *Cinerarias*, and *Pelargoniums*, are potted in sweet, fibry loam, and old, dried, sweetened cowdung forming about one-sixth of the compost at the last shifting, they will want but little artificial manure to bloom strong, and rather true to their kinds. In neither of these cases should we give artificial liquid manure before the plant was placed in its blooming pot, and then only when the roots were eating hold of the sides of the pot. Then, *Calceolarias* and *Cinerarias* might be supplied with it, if the compost did not have much organic matter in it, as the larger the leaves, and the larger the stool, other things being equal, the more numerous and strong would be the flower-stems. *Pelargoniums*, on the other hand, should not have any manure waterings given until the bloom-buds are apparent, "knotted for bloom;" as, if given earlier, the benefit will go rather to fine foliage, instead of strong, robust flower-stems. For these three tribes, I would prefer using a sweet, sandy loam, with enough of dried leaf mould, sweetened, and not too much decomposed, or a little heath

soil, to help to make the mass easily permeable to water, and use manure waterings at the right time, in preference to elogging the soil and injuring the roots, by mixing up with the compost sour, rotten dung of any kind. I have had too little experience with sulphate and carbonate to be a sure guide for our correspondent, but some friend will, perhaps, supply my deficiency. The great thing is, to err on the safe side, and not have the mixture too strong. Supposing that you use manure water alternately with clear, and that a common garden pot will hold four gallons, then for such a pot of water, two ounces of Peruvian guano will be ample, three ounces of superphosphate of lime, and three ounces of the patent blood manure. For Cinerarias and Calceolarias, nothing answers better than cowdung three or four months old; a bushel of that may be placed in a thirty-six gallon barrel, well mixed with the water, and a handful of lime thrown in to help to clear it. That, when used, should have as much clear water added to it, so as to make it seventy-two gallons. A peck of good soot, with a little lime, even though by using the lime you lose a little of the ammonia, will also make a similar quantity of liquid strong enough. Two pecks of deer, or sheep droppings, will also make seventy-two gallons strong enough, and if at all fresh, the droppings should be in soak several weeks before using the water. It is safest to use it often, and not too strong at a time. If you have various manures, the plants will relish a change, as much as any animal would do. I know an excellent forcer of the Strawberry, who, in fine weather, feeds them alternately with soot water, sheep dropping water, guano water, &c., taking care that in all cases the strength is moderate.—R. FISH.]

SALVIA GESNERÆFLORA LOSING ITS LEAVES.

"I have a plant of *Salvia gesneræflora*; about six weeks ago its leaves began to get black at the points and round the edges, the blackness increasing towards the centre of the leaves till they fell off, or till I took them off on account of their unsightly appearance. The oldest leaves are now all gone, and only the comparatively young leaves remain, which gives the plant rather a bare appearance. It appears to be going to flower well, but it would greatly improve its appearance were it full of green leaves. I had, also, a plant of the same in 1857, and it did exactly the same. Can you tell me what is the cause of what I complain of, and how to prevent the same in future? I recollect seeing a remark in one of your volumes to the effect, that if watering the plants was at any time neglected, it would be at the expense of some of the leaves. In consequence of seeing this remark, I was always very particular never to neglect watering them."—AN AMATEUR.

[If you have given plenty of air and water, we fear we cannot assist you. Closeness, dryness, and too much heat, are liable to produce the effects you speak of. We are rather surprised, that at the end of April the *Salvia* is only going to bloom well: with most people it has been in bloom sometime. If your first flowers had gone, we should not have been surprised at many of the larger leaves also taking their departure. No plant can be said to be thoroughly an evergreen, as respects keeping its leaves. Gardeners at places best supplied with evergreen Oaks, Arbutus, &c., know what a trouble they give, by dropping their leaves in summer. In the *Salvia* tribe, it very often happens, that the fading of the first flower-spikes is attended with a decaying of the first and larger leaves. I have previously mentioned how well Mr. Watson, of Hexton House, generally manages this plant. I saw them the other day; the plants were chiefly in No. 16, or eight-inch pots; were about a yard in height, and from four to five feet across at the top; one mass of scarlet, but the first flower-spikes were all gone, and consequently the spikes were small, and the foliage also smaller, as most of the large leaves had gone with the first spikes of bloom. I have always lost a part of the large foliage, when the first or primary flower-spikes faded. I have not observed much, however, the black mark spoken of by this correspondent, and on that point would solicit information. I mention the above, that "AN AMATEUR" meantime should not be extra discouraged; a little weak manure water will help the size of the leaves

left. Be sure there is nothing wrong with the drainage, and then in favourable weather you can hardly water over much.—R. FISH.]

BANKSIAN ROSES NOT BLOOMING.

"I have various kinds of white and yellow in cool green-houses, and out of doors; and I treat them well as respects growth, and prune them pretty well, but I get few Roses."

[The reason, we suspect, is in the pruning. They are generally two or three years old before they bloom freely; they should have little pruning; what is wanted is chiefly thinning out a lot of the small shoots that have flowered, and, perhaps, removing any very extra strong shoots about July, that there seemed little chance of getting thoroughly ripened that season. Long, moderately-sized shoots are to be encouraged in summer, such as will get well ripened before autumn, and from each bud of such shoots next spring will a short shoot come, with its cluster of flowers; of course, buds from spurs will also bloom, but not so finely. The little cutting needed should be done in early summer, so as to give room for the shoots to bloom next year. We lately saw two fine plants in the conservatory at Hexton House; the white was especially fine; it had been trained to the top of the house, and was there flowering freely from short, stubby bits of last year's wood. But the great charm was in the long, streaming shoots, produced last summer, and allowed to grow unchecked and unstopped, and which, though from three to five yards in length, were a mass of bloom from base to point; and looking all the more lovely as they hung from the roof in graceful natural wreaths, with scarcely a tie seen to mark the gardener's artistic care. These, when done flowering, would be cut considerably back, and other shoots encouraged to take their place.]

REMOVING BEES.

"I have a hive or two of bees now at Caterham, on the Surrey hills. I want to remove them to Wanstead, about twenty-five miles. Can I do so? and now?"—J. L.

[Your stocks of bees ought to have been removed at Christmas, or early in the year. There would now be risk of much injury, and perhaps of destruction, as the hives by this time are heavy, or ought to be, with stores, bees, and brood.]

NADIRING THE STEWARTON HIVE.

"Having procured a Stewarton hive last year, and put a prime swarm into it, I am rather at a loss how to proceed in regard to Nadiring in the present year. The swarm stands in two boxes at present, and has plenty of bees and honey; when requiring more room, I mean to put on a honey box. Then, as regards Nadiring, do you consider it essential to do so? and, if so, would you do it with an empty box, or a full box of comb made last year, as I have choice of either? Then as to an opening to the honey box, I mean to draw one of the shortest slides at each side; should rainy weather set in after seeing they have commenced storing in it, would you contract or extend the opening to it? I think there must be something in this part of management to be clear of brood."—INQUIRER.

[We consider judicious Nadiring as the only plan to secure pure honeycomb. There are various methods, but in your case we would say, add the box of comb made last year below, if certain that the two boxes are well filled; and when the three boxes are well stored, put on a honey box, and draw out a slide on each side. Should the weather become wet, after work has commenced in the honey box, push in the slides, leaving about an inch of space open. Under such circumstances, if the bees become fewer in number on the comb in the honey box, you may be satisfied there is no brood, and should withdraw the two slides again immediately the weather improves.]

STRAWBERRY FORCING.

"1. It is recommended in *The Cottage Gardeners' Dictionary*, and in the treatise of McEwen, to lay the runners in small pots in summer, and when these pots are filled with

roots, and the runners are separated from the old plant, they are repotted into the fruiting pots. Is the benefit of this plan so great as to compensate for the additional trouble? Would it not do as well to lay the runners into the fruiting pots at once, especially as rather small pots are recommended to fruit them in? The pots of those which have borne a crop in the spring, will be available to put among the roots in the open ground, to lay the runners in, as soon as any are ready, in June, July, and August.

"2. Is there any great advantage in taking up from the ground and potting nice strong young plants in the spring, taking off all blossoms and runners during the summer, and afterwards treating them as the runners, after being separated from the old plants?

"3. Some of the forced plants do not throw up any blossoms. Is it worth while to keep them in the pots for forcing the next season, as I see some gardeners, quoted by Mr. Loudon, used to grow them for two years before forcing?

"4. Having a leaf bed, with a nice gentle heat, in a late vinery, will the Strawberries do best plunged into the bed, standing on the bed, or raised up nearer the glass on a shelf?

"5. What is the cause of the green fly attacking the *Black Prince* Strawberries when in blossom, while other sorts, under the same treatment, escape? This has been the case with mine this season.

"6. In November and December, is it better to keep the plants out of doors, preserving them from frost and heavy rains with straw, &c., or to take them at once in houses, at rest, where the frost is only just kept out? This last plan seems the safest, and is attended with less trouble; but will it be equally well for the Strawberry plants?

"7. Supposing the 1st of January the time of beginning to force, would it be any advantage to bring them on in a dung hotbed for about a month, and then put them into a forcing house about the beginning of February? Or would they do equally well in a house from the first, although the atmosphere of the house was not moist, except what might arise from a leaf bed where the heat at that time would be very little?

"8. You have often given directions how to treat Camellias and Azaleas after flowering, by putting them into a vinery, &c. Will you be kind enough to say how *Rhododendrons*, in pots, and *Daphne Indica* should be treated after flowering, until the season for flowering again."—CLERICUS.

[We should have felt pleasure in giving a long answer to your various inquiries, had not most of them been fully discussed in previous volumes, and some of them even so lately as page 351, of the last volume.

1. The laying the runners into small pots in summer, and then repotting them into pruning pots, I consider the best mode, but many of our head gardeners lay the runners into the fruiting pot at once; and if the pots are large 32's or 24's, they lay two runners in a pot, and are very successful. Mr. Snow, at Wrest Park, and Mr. Forbes, at Woburn Abbey, generally lay the runners in the fruiting pots. In a previous volume I described how Mr. Forbes performed the operation, having a little cone in the centre of the pot, so that the plant should be well elevated, and not sunk beneath the rim. Our correspondent must, therefore, in such a case, decide for himself. I generally lay the runners in small pots, for these reasons. The season is generally a busy one, and it requires much less time to use 60's than 48's or 32's; and neither is the same nicety required in filling and draining. When laid at once in fruiting pots, worms are apt to get in and clog the drainage, and the soil gets sour and unhealthy. When repotted from small pots, the centre of the ball is sure to be filled with roots. The soil used is sweet, and mellow, and fresh for the roots to run into. The plant can be potted firmly, and the collar kept well elevated, and the pots can be so placed that there will be little danger of worms getting into them, and so as to receive all possible light. These operations can generally be better attended to, than when the layers can first be obtained. When I have been very busy and could spare two or three lights of frame, I have taken off the runners with a good bit of the stem left, just as roots appeared, and inserted them about three inches apart, in light, rich soil, in a frame, covered them with glass, watered and shaded until well rooted, and then lifted and transferred to the fruiting pots. Any of these plans will answer, if other matters are properly attended to.

2. We do not think there would be any advantage in the plan proposed. South of the Midland Counties, runners of the season answer as well, or better, than older plants; farther north, two-year old plants are much used. If you are so situated, we would not advise taking up strong plants in spring as you propose, but either in the autumn or the spring we would select *small* plants or runners left on the bed, prick them out on a rich border, six inches apart, remove what flowers appeared, and lift and place in their fruiting pots in May, June, or the beginning of July. We are presuming that you are to use six-inch pots. Such large plants as you propose, would require large pots. We have sometimes adopted this plan, but seldom found better results, than from runners. In the north, such a plan is advisable.

3. Many force their plants a second season, whether they have fruited or not. I have frequently done so, when I could not get runners early enough, but I never kept them in the same pots. After being taken from the houses, they were placed behind a wall, so as to be shaded and rested for a month or two, say until the end of June, and water given just to keep them from flagging. About that time they were examined, and if a plant had broken into a number of buds, all the smaller ones were picked out, leaving a couple, or so, of the best. The plants were turned out of the pots, the balls broken carefully with the hand, the most of the old soil got rid of, and then the plant placed in fresh soil, in a similar-sized, clean pot, and encouraged to fill the pot with roots, and ripen the buds before autumn. This mode is far preferable to leaving them in the pots. In Hertfordshire, I have not found this mode preferable to runners. Farther north, I believe it would beat runners often. By turning such plants out into the ground, as a regular plantation, you may have Strawberries from them late in the autumn, and a wonderful crop the following season. When I have turned such a plant early into a large pot, a great produce was obtained the following year, but the fruit was not so fine as that got from smaller and younger plants.

4. As to plunging the pots in gentle heat, see Vol. XIX., page 362. It is advantageous, if well managed. If care is not exercised, the plants will do better placed on a shelf near the glass at once. If in a frame, the plants should be near the glass, and will be safer if the pots stand on a hard bottom. Your bed, I presume, will be too far from the glass.

5. All forced Strawberries are, more or less, subject to the green fly, but some seasons we hardly meet with one. The reason why you have found *Black Prince* affected, and other kinds free, I presume, to be owing to the temperature being too high. See Vol. XIX., page 361. The *Prince* will not stand so much heat as *Keen's* or the *Queen*.

6. The plants will do best under the protection of glass in winter, where such protection can be afforded them. A little frost will do them no harm, but they would just be as well if the earth was not much frosted. In such a place the roots may be dryish, rather than otherwise, but not too dry. See the article referred to, page 362.

7. See the above page and answer to 4th query. The advantage will depend entirely on the management. The great disadvantage in such a dung bed, from November to February is, that with air, &c., in dull weather, the tops of the plants are kept too moist. After the middle of February, if the glass is clean, the plants near it, the bottom heat mild, and the roots prevented running in the bed, the plants may be nicely forwarded for going into houses. Before January and February, if that attention cannot be given, it will be safer to place them in a house shut up for forcing at once. If only one house is so used, a sweet, mild hotbed will do well, if care is taken that the roots are neither too hot nor too dry for forwarding successions. When the first lot shows bloom, another lot should be placed in the frame. The last crop may be ripened in the frame before the earliest out-of-doors comes in. In early forcing, the moisture in the atmosphere that would suit a Peach house, or a vinery, would be quite sufficient for Strawberries. All would be benefited from what escaped from fermenting leaves in a pit in the middle of the house. But unless your house is glass all round, and nothing to shade the roof, the Strawberries will be too far from the glass, if placed on the surface of such a bed.

8. Treat the *Daphnes* much the same as the Camellias. When stopped growing, and the buds are set at the points of

the shoots, harden them off by degrees, and by July or August they will do in cold pits, or out of doors, but in the latter case the pots should be defended from the sun's rays. House again in October. Peat and fibry loam suit them well.

Rhododendrons should be kept close in the greenhouse whilst forming their wood after blooming. Obtain full light and more air as the young shoots approach completion. When knotted at the points, and beginning to swell, remove them out of doors, and keep them shaded from full sun at first, and in about a fortnight place them full in the sun, and protect the roots with a piece of mat round the pots, or a piece of turf put against them. The great thing is, first to secure the flower-buds, and then to prevent that bud bursting again into a shoot. If you have plenty of room, they will do well in an open, light, airy greenhouse all the summer.—R. FISH.]

BEEES NOT WORKING.

"I have two hives of bees, which I purchased last autumn. For weeks past the bees of one have been very busy bringing in pollen; whereas I have very rarely seen a bee enter the other with it. On examining them to-day, the former hive was completely full of bees; whereas those of the latter appeared not to fill a tenth part of the hive, and not to be more numerous than a fortnight ago. Part of the comb of this hive is of a good colour; but the bees have, when examined, always been clustering in a part where the comb is of eccentric form from the cross bar, and is very black. Now, I presume, this hive either has lost its queen, or she is old. It is weighty, and must, I should think, contain some honey. I am the more disposed to think this is the case, as the bees have been very indifferent to the food which has been given them during the last few weeks.

"Will you also advise me as to the best kind of hive to keep for general purposes, but without requiring great nicety of treatment?"—A BEGINNER.

[Your account of the state of the inactive stock hive would lead us to believe that it is old and worn out, with, probably, an unfertile queen. As regards weight, that may, in part, arise from an accumulation of old pollen, especially as many of the combs are dark with age, and, consequently, less fit for the purpose of receiving brood. This is the more likely, as you say the bees are indifferent to the food offered to them. It is not very probable that you will derive profit from a stock thus situated; and, unless a speedy change takes place in the appearance of matters, we should be inclined to take possession of what stock of honey it may contain. Fumigation might enable you to form a better opinion; turning up the hive, and removing the worst of the combs, so as to leave space for the bees to make new ones, if so disposed. As to the common kind of hives, they are described in most of the works on bees. Perhaps those recommended by Mr. Payne, or Mr. Taylor, would best answer your purpose. The latter are illustrated in the "Bee-Keeper's Manual."]

NOTES ON NEW OR RARE PLANTS.

PASSIFLORA RACEMOSA. *Brotero*. Nat. ord., *Passifloraceæ*.—Native of Brazil, discovered and introduced by Mr. Woodford. Stem climbing, moderately strong, extending far and branching freely. Leaves on petioles of moderate length, three-lobed, quite smooth. Stipules cordate, rather elongated; entire. Peduncles in pairs, in the axils of the leaves. Involucre three-leaved, falling off before the expanding of the flowers. Calyx winged and keeled; presenting, in the bud, a very distinct appearance, delicate crimson. Corolla of five petals; broadly lanceolate, of the same colour as calyx. Rays, or corona, short, and not very striking.

This may justly be considered one of the finest of the family to which it belongs. It has been named *racemosa* on account of its frequently producing its flowers in terminal and axillary racemes; but as this is no permanent character, the name conveys little satisfactory meaning. *Princeps* is the name by which it is commonly known in gardens, given it by Loddiges, who first possessed the stock of it in this country. It blooms in March and April, and is remarkably free flowering. It prefers a compost of good rich loam and peat; about two parts of the former to one of the latter, and a little sand.

Propagates freely from cuttings in heat. It may be grown successfully in a pot, but succeeds best planted out in the stove.

ACACIA HISPIDISSIMA. *Dec.* Nat. ord., *Leguminosæ*.—Native of the Swan River, and introduced by Drummond. Habit bushy and compact. Younger branches thickly clothed with short soft hairs. Spines axillary, awl-shaped, longer than the leaves. Leaves produced in pairs, on very short petioles; pinnate, with five or seven pairs of linear, smooth, or roughly ciliated leaflets. Heads of flower globose, in pairs (frequently singly), axillary; bright orange yellow.

A beautiful early and free-flowering species of *Acacia*. Loam of good quality, with a little peat and sand, form the best compost for it. It blooms in March, and lasts through April. Ripens seeds freely, thus presenting an easy mode of propagation.

BIGNONIA CAPREOLATA. *Lab.* Nat. ord., *Bignoniaceæ*. Native of the southern parts of N. America. Stem strong, climbing. Branches numerous, smooth and flexible. Leaves conjugate; oblong lanceolate, subcordate at the base, smooth, entire, margins slightly waved. Petioles short and rigid, with a tendril-like appendage. Flowers produced sometimes singly, but more frequently in numbers, in the axils of the leaves. Peduncles about an inch and a half long, flexuose. Calyx entire, or obscurely five-toothed, angular. Corolla large, trumpet shaped, with a limb of five deep, obtusely ovate, segments; dark red tinged with orange.

A very desirable hardy greenhouse climber. It produces its flowers as early as April. A good mellow loam, and a little peat and sand form the best compost for it. Pruning should be dispensed with as much as possible, as it only induces to more robust growth, and that destroys its otherwise free-flowering character. Propagates readily by cuttings.

MELALEUCA SQUARROSA. *Lin.* Nat. ord., *Myrtaceæ*.—Native of New Holland. Shrub, about five feet high, with somewhat lax habit. Branches four-angled. Leaves small, opposite, or scattered, broadly ovate, acute, sessile, or on very short petioles. Flowers produced in whorled spikes. Bracts foliaceous and numerous. Calyx very minute, of five small teeth. Petals small, nearly round, and concave. Stamens very numerous, arranged five bundles; creamy white.

An excellent early and free-flowering greenhouse plant. Loam, and peat, and sand form the best compost for it. Propagates freely from cuttings. The flowers are very fragrant, and are produced in April and May.—S. G. W.

EARLY SHAW POTATO.

THIS kind has been a favourite in Norfolk many years, and more so since the Murrain appeared; for, like other second early sorts, the *Shaw* is better for a general crop than either the more early or later ones. The produce from the first being less, and the late kinds are more apt to be diseased before they come to maturity. The *Shaw* is very prolific, and is as good during winter as that of any of the later kinds. This does not accord with a writer's account of it in the last vol., page 398. He says, that it is "a large, coarse, hollow-eyed, yellowish fleshed Potato . . . not a good cropper, liable to disease." By this, it seems, that the Potato he speaks of is not the same kind as the *Shaw*, so well known in this quarter. Indeed, the one he describes must be a late sort, at least his account of its having hollow eyes does not accord with the general rule that early Potatoes have flat ones.—J. WIGHTON.

TO CORRESPONDENTS.

HIVES (Alpha).—We are using those you refer to, and find them good. There are small windows in them; but if you wish to inspect the bees fully, you must have a hive made entirely of glass, like that in the Zoological Gardens. For a description of cheap hives, refer to "Bee-keeping for the Many," published at our office, price fourpence.

HYBRIDISING FRUIT (I. M. Jope).—There is no separate work upon this subject. The process is just the same as for Pelargoniums, and other flowers, as detailed in our pages.

SESAMUM CAKE FOR BEES (G. R. Meaby).—You will find all we know upon the subject in our 471st and 473rd numbers.

SEDIMENT OF SEWAGE RESERVOIR (An Amateur Gardener).—Dig it into the soil of your kitchen garden, between rows of the Cabbage-worts, about Sea-kale, and Rhubarb, and into Asparagus beds. The best way of applying it is to open a trench, pour in the sediment, and return the earth over it. The earth will soon deodorize it.

BLUE POLYANTHUS (Beta).—No doubt your Polyanthus is blue, with a yellow centre.

SEED OF CEDARS (G.).—We replied at the time that the "little kind of nut" was the seed of the Cedar. One cone seems to have proved fruitful, fallen, decayed, and shed its seed. Cuttings of Laurels, stuck in winter, sometimes strike root. The best coating for your stuccoed cottage will be two paintings with boiled linseed oil. It will render the stucco waterproof, and last for years.

VINE LEAVES DISEASED (W. C.).—They are affected with some kind of fungus, or mildew; dust them over with flowers of sulphur. Your Vines seem weak; give them every week a good root-soaking of liquid manure.

SPOT ON PELARGONIUMS (Cereo).—We suspect that one cause of the evil is your syringing the leaves of the Geraniums, and the sun striking upon the foliage before the leaves are dry, and, altogether, having a closer and a moister atmosphere than is suitable for the plants. When they are smoked for the green fly, and get a good syringing afterwards to clean them thoroughly, they should be shaded, and plenty of air given, until the foliage is thoroughly dry. Plants are more subject to spot in winter, when kept in pits with glass merely over head, than when grown in houses with glass in front as well as on the roof. Coldness and closeness in winter, especially if the soil is extra moist, is also greatly promotive of spot. Standing upon a damp bottom, such as upon earth and ashes, also promotes this evil, even though great care should be taken to ventilate, as exhalations are apt to rise from such a standing medium. The best securities from spot are an average temperature of 45° in winter, just enough of moisture to keep the plants slowly growing, and from flagging, abundance of air, keeping the plants on wood shelves, if possible, and letting no water drop on the floor that can be avoided. In pits, sunk beneath the ground level, it is difficult to keep the foliage dry enough. Great care at all times should be taken that the leaves, whether wet with condensed moisture or syringed, should be thoroughly dry before the sun shines upon them. We do not know the "Catechisms on Farming."

MARINE AQUARIUM (Felixstowe).—The drawing answers your question, showing that the oysters were outside the bottle.

TEMPERATURE IN THE SHADE (Clifton).—The thermometer should hang on the north side of a wall; a foot from it, and five or six feet from the ground.

PALMA CHRISTI (Long Tom Coffin).—It is an annual.

GRUBS DESTROYING PEAS (— Pollock).—These marauders are the larvae of the common "Daddy long-legs" (*Tipula oleracea*). We cannot think that they caused the death of your fowls who eat them.

INSECTS (R. B., Teddington).—The insects sent are the beetle parent of the Wireworm, *Elatér obscurus*; and the almost equally destructive Weevil, *Otiorynchus vastator*. If the ground is full of them, as described, we recommend the surface to be pared off two or three inches deep, and burnt. The Ants were hunting for Aphides, or Scale insects (Coccidæ). If so, your trees must be in a foul state; we do not think the Ants attack young buds.

VARIEGATED-LEAVED GERANIUM (W. N.).—The leaf of your seedling scarlet Geranium is the richest we have seen of that kind of variegation. It has a Golden Chain outer edge, then a crimson Horseshoe, and a purple Horseshoe behind it, with a small space of green in the centre. The one which her Majesty admired at St James's Hall, in the Wellington Road Nursery collection, is the nearest to yours of all that have been exhibited; but we have had not one that way, which holds its colours permanently in summer, but only early and late in the season.

POND SURFACE BECOMING GREEN.—"In the flower garden under my charge, there is a small pond of water, which looks very unsightly, from the surface being covered with a green scum. We occasionally skim it off, but in two or three days it is covered again. If you, or any of your correspondents could suggest a remedy to prevent it, I should feel greatly obliged. The supply, a good one, is from perpetual springs, which rise in the bottom; this is paved with pebble stones. There is a large pond at some distance, into which the water discharges itself; but nearly on the same level. So that I cannot get a sufficient fall for the scum to run off."—G. C. [We shall be obliged by any correspondent giving us some information of a remedy for this annoyance.]

VARIOUS (W. J. W.).—1. The best time for budding Apricots and other wall fruit, is as soon as the bark of the stock "rises," or parts freely from the young wood, some time in June. 2. Plum stocks for Apricots are grown from layers, suckers, and seeds. 3. The *Manetti* Rose stock is propagated by cuttings planted in October. They should be from four to six inches long, and the bottom eyes taken out, leaving two or three eyes at the top. 4. Roses on their own roots should be pruned just the same as when on stocks. 5. Newly-rooted Rose cuttings need no stimulant till they are two years rooted, and very little the third year. 6. It is best to remove Rose cuttings struck in autumn, the autumn following. 7. Mr. Cranston is a nurseryman in Herefordshire. His name is well known at the post-office of that quiet old city, Hereford. Address him there.

GROUND BEES (Mrs. Stainer).—We know of no mode of destroying them, except by a fusée of tobacco rolled in touch paper inserted into their holes. Be assured that they are perfectly harmless, and do not feed on the roots of your Anemones.

JULY 8th. PRESCOT. Sec., Mr. James Beesley.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.

AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth, Shipley.

AUGUST 30th and 31st, and SEPTEMBER 1st. NORTH HANTS. Sec., Mr. T. Moore, Fareham, Hants.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

OFFICIALS EXHIBITING.

At the last general election, the success of many candidates was helped by a Crimean medal, and a halting address was "lifted along" by one of those *accidental* speeches from *some man* in the crowd—"He will stand by the people here, as he did by his colours in the Crimea." What a cheer this produced, and how the waverers turned on the strength of it! This was because they were collected in a crowd, and the enthusiasm was catching. But, past services ought to form a strong claim, and the Romans thought so when the candidates for office stood, on the day of election, with bare breasts, to show the scars of the wounds received for their country.

We cannot help thinking, that the Committees of Poultry Shows stand somewhat in the position of these candidates. Many of them can point to the records of their deeds, and some can show scars, especially in their purses. How one of them would move exhibitors, if he held aloft a long green purse, which moved with every passing breeze, and if he showed it torn open at the end, and shouted—"See what a rent the last Show's failure made!" What an appeal this would be. But would they rally round him?

We know it is said that, in agricultural districts, the repairs and alterations that were required by the outgoing old tenant, and the refusal of which caused the conclusion of a tenancy that had been hereditary for centuries, are readily conceded to the new one when he enters. Why is it? Is it that, like Sancho of old, people are full of proverbs, and fancy a new broom sweeps clean, or is it a love of change inherent in man?

We do not think, in many instances, exhibitors esteem Committee-men as highly as they should. Now, what a notion it is, that a gentleman filling that office shall not exhibit. What, in the name of all that's desirable, would make a man take the office, but a love of the pursuit; and what gives him such an interest in it as competition? Take that away, and he will have the delight of incurring responsibility, of receiving and unpacking fowls all night, of attending the Show during two days, and then, last scene of all, of repacking and sending off again. And this shall be incurred, in order that others may exhibit, and carry off the prizes! Let them do so if they can, by all means, but let those who have the trouble, also have the opportunity of winning.

All credit should also be given to those who have successfully carried on Shows for many years. They are the veterans, the tried men, and they should not only be respected but supported by amateurs in general.

The *on dits* of a Show should be discouraged. "The Committee and Judges are too intimate," says one. "I heard one of the Committee tell one of the Judges, he had a shoulder of mutton and onion sauce at two," says another.

It reminds us of a passage in a French play, in which Potier played many years ago. The gossip of the place crept stealthily after a head man.

"There is a conspiracy a foot!"

"Ha! who is at the head of it?"

"Pitt and Coburg!"

"Who told you so?"

"Horatius Cocles, the tinman round the corner."

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MAY 26th, 27th, and 28th. BIRMINGHAM (SUMMER). Secs., Messrs. Titterton and Cattell, 26, Worcester Street. Entries close May 10th.

JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, Hammet Street, Taunton.

JUNE 9th and 10th. BEVERLEY AND EAST RIDING OF YORKSHIRE. Sec., W. W. Boulton, Beverley, Yorkshire. Entries close on the 1st of June.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. Sec., Wm. Henry Dawson, Sheffield.

ENTRY CHARGES AT POULTRY SHOWS.

So much experience and real practical ability have been brought to bear upon the drawing up of the schedules for our principal Shows, that one hardly likes to suggest any alteration. What private amateur can hope to teach any-

thing to the Birmingham Committee, or the Crystal Palace Secretary? Yet, as it appears to me, an anomaly exists in the prize-lists of both these leading Exhibitions, which I would fain see removed. Why should the entry fee be the same for the Single Cock classes, as for those in which three or four birds compete in a pen? The object of every exhibitor in making each entry is twofold: he hopes to gain a prize, and to have an artificial value stamped on his birds, either for sale or to keep. For entering a pen, either of adults or chickens, in the general classes at Birmingham, a man really pays a fee of 7s. 6d.; at the Crystal Palace he is charged 6s. In return, he gets a chance of a share of prize money, amounting to £6 or £7, and also of selling three or four birds at what he considers a remunerating price; whereas, when he is charged as much for one entry in the Single Cock classes, only £3 are offered for competition, and only one bird can get sold. Either the first fee is too favourable, or the last too high: it is clear, that the exhibitor in the general classes is in a far better position than he who exhibits only male birds. Yet no classes are more useful to the public, or more remunerating to the managers, than those for Single Cocks; let these classes then be encouraged. I do not believe anyone would lose, by reducing the fee for these to half that charged for showing the family parties. Of course, where high prizes are offered for Single birds, extra entrance fees are quite fair.—K.

EGGS WILL TRAVEL UNINJURED.

As I constantly see, in your COTTAGE GARDENER, complaints from correspondents about eggs not hatching when sent any distance by railway, I beg to say that on the 2nd of April I received thirteen eggs of the Pencilled Hamburgh breed, all of which hatched off, except one broken by accident. They had travelled above 100 miles by railway, and were packed in a box of bran only.—ED. BIRCH REYNARDSON, Little Ponton Hall, Grantham.

PIGEONS.

THE NATURAL HISTORY OF THE PIGEON.

NATURALISTS have, for the convenience of arranging the various birds, divided them into orders. These divisions being but few, compared with the numerous sorts of birds, of necessity contain different genera, the tribes comprising which, although they may have some slight point of resemblance to the characteristics of the order, yet are in themselves quite distinct. Each genus is again divisible into species, and each species into varieties.

Thus, in the very large and numerous family which constitutes the genus *Columbidae*, many of the different species of which, varying greatly in form and other characteristics, make it uncertain to which order they belong: consequently they have been placed by different naturalists, sometimes among the *Rasores*, or scraping birds, and at others, among the *Insessores*, or Perchers.

This great difference among the various species induces me to divide this genus into two sub-genera, or tribes, viz., the Pigeons or Ground Doves, that build their nests on the earth, and rarely, if ever, perch; and the true Doves, or arboreal Pigeons, which both build their nests and perch on trees.

To this latter tribe belong our Ring Dove, Stock Dove, and Turtle Dove; while the former includes all our varieties of domestic Pigeons.

In the present manual I shall confine myself almost exclusively to the domestic, or fancy Pigeons, simply giving a short notice of our native Doves, or arboreal Pigeons, to distinguish them, and show their difference from our domestic varieties, which are also of a different species.

All the Pigeons of which I intend writing, build a platform nest, and lay but two eggs at a sitting. The young, when first excluded, are helpless, and are fed by the old ones from their crops. They feed on corn, seed, and berries, and are strictly monogamous.

The precise species from which our domestic Pigeons are descended, has long been a matter of doubt. One distinguished naturalist supposed them to proceed from the admixture of

our three native Doves, as the Ring Dove, Stock Dove, and Turtle Dove; and in this way he accounted for their diversity of form. But as these Doves are of different species, and it being very difficult to procure a cross between them, and, when obtained, the offspring are sterile hybrids, I think nothing more need be said about it. The second hypothesis was, that they were all descended from the Stock Dove (*Columba Aenas*), and that the Blue Rock (*Columba Livia*), and the Dovehouse Pigeon (*Columba Agrestis*), were the intermediate states of the same birds in its approach to domestication. But this theory evidently had its rise in the confusion that long existed respecting the identity of the Stock Dove, and Blue Rock Pigeon, which are now acknowledged, by all naturalists, to be distinct species. I have also found by experiment that the produce of the Stock Dove and domestic Pigeon are mules.

It then remains to be seen, whether the Blue Rock, or Chequered Dovehouse Pigeon, has the greater claims as being the progenitor of the race.

I believe that the Blue Rock is a distinct species from the Dovehouse. I have not, however, had any opportunity of trying to what extent the two will breed together, or if their produce would be productive, *inter se*, as I have never been able to procure the Blue Rock Pigeon in all its purity. But its wild unreclaimable nature, and its shunning, so completely, the abodes or neighbourhood of man, lead me to suspect that such is the case.

The Dovehouse Pigeon is, on the other hand, a bird eminently susceptible of domestication, is everywhere found in that state, and a great many of the varieties of Toys, or the lower class fancy Pigeons, are evidently of this sort, little or nothing changed except in the colour of their plumage, while many others appear to be derived from the same source, but crossed with the other fancy kinds, or showing more or less the effect of careful breeding and selection. Thus far I am willing to admit of their descent from one original stock, viz., the Chequered Dovehouse Pigeon, *Columba Agrestis* (*Columba affinis* of some). But when we come to examine the varied forms and distinct properties of many of the higher class fancy pigeons, I feel a great disinclination to assign them one common origin; nor do I think that even the admission of the Blue Rock (supposing that Pigeon will produce fertile offspring with the Dovehouse Pigeon) is sufficient to account for the many varied and marked peculiarities, or that domestication could so alter the form, and even nature, of the different breeds which continue to present the same peculiarities through so many generations. Of course, I do not deny the possibility of such a thing, but I think it very improbable, and I cannot divest my mind of the idea that, at least, some of the so-called varieties are something more. I allude to the Wattled Pigeons, the Fantails, the Trumpeter, the Jacobin, the Croppers, and the Tumblers. These birds have all certain peculiarities by which they may be known and distinguished, under whatever circumstances of form, or colour, they may be bred. These properties are fixed, and do not appear among other varieties, nor are they liable to be lost, unless cross-breeding is resorted to. Neither have I ever heard of their appearing suddenly, or from any particular plan of breeding, which we might expect, if they were, as some suppose, owing to taking advantage of some freak of Nature, or accidental malformation. I should incline to the belief that the various fancy Pigeons owe their origin, not to one particular stock, but to the domestication and mingling of some five or six varieties, or nearly allied species. These original families have long since become lost and obliterated, while from their mixture our present numerous varieties arise, the result of long domestication, and careful selection and breeding.

It is on this principle, and for these reasons, I have divided the subjects of this manual into four divisions, as 1st, our Native Doves; 2ndly, Indigenous Pigeons; 3rdly, Fancy Pigeons; 4thly, Toys.—B. P. BRENT.


(To be continued.)

OUR LETTER BOX.

"INFORMATION WORTH NOTICE" (*Amicus galli*).—We have nothing more to say on the subject; we merely record facts for others to form their own conclusions from, or to induce further inquiries, if needed.

WHITE DORKINGS (*I. D. F.*, *Easterhill*).—Write to Captain Beardmore, Fareham, Hants.

WEEKLY CALENDAR.

Day of Mth	Day of Week.	MAY 18—24, 1858.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
18	TU	Grevillea longifolia.	30.011—29.944	78—46	W.	—	6 af 4	46 af 7	45 af 0	5	3 51	138	
19	W	Habrothamnus elegans.	29.971—29.876	75—48	S.W.	—	5 4	48 7	8 1		3 49	139	
20	TH	Hardenbergia Comptoniana.	29.898—29.725	75—46	S.W.	.01	3 4	49 7	24 1	7	3 46	140	
21	F	Hovea illieifolia.	29.760—29.648	66—46	S.W.	.02	2 4	51 7	36 1	8	3 42	141	
22	S	Hovea elliptica.	29.846—29.793	60—47	N.E.	.20	1 4	52 7	47 1	9	3 39	142	
23	SUN	WHIT SUNDAY.	29.598—29.462	66—49	E.	.23	0 3	53 7	58 1	10	3 34	143	
24	M	WHIT MONDAY. Q. VICTORIA [BORN, 1819.]	29.623—29.472	70—40	S.W.	—	58 3	55 7	9 2	11	3 29	144	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 66.1° and 44.2°, respectively. The greatest heat, 89°, occurred on the 23rd, in 1847; and the lowest cold, 30°, on the 20th, in 1856. During the period 120 days were fine, and on 97 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

SEEDLING crops to be thinned out while the plants are small; and slugs and snails to be destroyed by all means.

BEET.—The plants to be thinned to one foot apart while they are small, and the vacancies, if any, to be filled up with those that are drawn, as they bear transplanting well. If the crop has altogether failed, it is not yet too late to sow another.

BROCCOLI.—Sow the early and late sorts, not forgetting the *Walcheren* and *Knight's Protecting*; the early to come into use in October and November, and the late sorts in the spring.

CABBAGE, planted early, to be earthed-up, and some of the most forward of the autumn planted to be tied up, to form heads for early use.

CAPSICUMS.—Plant out on a warm border, to be watered during dry weather.

CAULIFLOWER.—Sow small quantity for succession.

CELERY.—Continue to prick out seedling plants. A few trenches for an early crop to be dug out, to get a crop of *Lettuce* or *Spinach* between the trenches.

CUCUMBERS (in frames).—The shoots to be occasionally stopped, to keep the plants in a bearing state. Plant out on ridges under handglasses.

ENDIVE.—Sow a little for an early crop.

KIDNEY BEANS (DWARF).—Sow in rows two feet and a half apart.

LEeks.—Sow, to plant out for winter use.

LETTUCE.—Sow, and plant out from early seed-bed one foot apart.

ONIONS.—Transplant the autumn sowing in showery weather. Be careful not to bury the bulbs. Sow a good bed of *Silver-skinned* on poor soil, in an open situation.

RHUBARB and SEA-KALE.—Cutoff all blossom-shoots; they exhaust the plants much. Thin out superfluous shoots of *Sea-kale*; about four or five to each stool is sufficient.

SPINACH.—Sow.

VEGETABLE MARROW.—Plant on dung ridges.

FRUIT GARDEN.

FIGS.—Thin away weak shoots, and pinch out the tops of the others when six inches long.

STRAWBERRIES.—Hoe between them, and mulch the surface with any short litter. Cut away runners, except they are wanted for forcing.

WALL TREES.—Continue to disbud by removing all foreright shoots, &c., leaving for the present, however, any shoot the leaves of which overhang and shelter fruit. Thin the fruit where it has set very thickly. Look over grafts, and loosen the ties, if too tight.

FLOWER GARDEN.

Except in very favourable localities, it will be unsafe to commence planting the general bedding stock

until a more decided and favourable change in the weather takes place. Meantime it is necessary to harden the plants off, and to decide what is to occupy each bed.

ANNUALS, such as *German Asters*, *Stocks*, &c., that were sown last month, to be pricked out on beds, protected in unfavourable weather under mats supported on hoops.

CROCUSES, and other early-flowering bulbs, to be taken up as soon as the leaves die off.

CUTTINGS of *Phloxes*, *Alyssum*, *Arabis*, of double yellow and red *Wallflowers* placed in a mild frame heat, in small pots, will soon strike root.

HEPATICAS.—Divide and transplant.

PEONIES to be tied up.

PANSIES.—Continue to put in cuttings. The side-shoots root best.

PINKS.—Tie up, and remove the superfluous shoots.

POLYANTHUSES.—Divide, planting them in a very shady, cool place; if such is not to be found naturally, artificial shade must be made, as it is indispensable to their well doing.

ROSES.—*Standards* and *Dwarfs* to be well top-dressed with good rotten manure. WILLIAM KEANE.

SPRING FLOWERS—BEDDING OUT IN THE RIBBON STYLE.

SPRING flowers were just three weeks later at the beginning of the April of this year, than they are on an average of seasons, owing to a month of most bitterly cold weather, after the early part of February; and I could see very little gained from this lateness. Round London, at the beginning of May, even to this, the 10th of May, we are a fortnight behind with the greater number of spring flowers, and full three weeks with a few of them. The great bulk of the early Tulips will, therefore, be in their prime when it is just time to plant out old *Calceolarias*, old *Geraniums*, and autumn struck *Verbenas*, and if any of the three, or of their kindred, are booked to come into the Tulip beds, they must wait a bit, for no man or woman can trifle with Tulips with impunity. Snowdrops and Crocuses may be shifted from place to place at any one stage of their growth, or of their blooming season, if they are handled with care; but there is a time in the growth of certain kinds of *Oxalis*, and *Gladiolus*, and in all kinds of Tulips, when ruination would be the consequence of having them disturbed at that particular season. The reason for this is, when the old Tulip bulb puts up the flower-stalk, the circle of its existence comes to an end, and it dies like a grain of corn which was sown, grew up, and produced the stalks which give the increase so many fold. All Tulips, without exception, die at that period, as surely as the sown corn; but, differently from the corn, the Tulip multiplies itself at both ends—at the roots, in new bulbs, like young Potatoes, and at the seed-pod, like an ear of

corn. You may have the pod and the seed in good order, after moving the Tulip two or three times, since it started to grow; but you will want the young Potato-like increase at the root,—the crop of new bulbs,—if you disturb the old “root” from the time it begins to throw up the flower-stalk till the young bulbs are hatched.

Some people are so clever and knowing, that they could change, and alter, and do many odd things with eggs every day while the hen was sitting, and some florists and floristical gardeners are just as far up in the mark with Tulips, and all manner of bulbs; they can do anything with them at anytime they have a mind, and no harm comes of it; but for ordinary people, the safest way is to let well alone, and especially to let the Tulips have their natural way, as no one can tell the very day the young Tulips are hatched, or come into life, and are safe after that, because that entirely depends on the season, and the kind of Tulip.

I have a Tulip secretary, one of the most scientific Tulip writers in England, if I am to believe in the consummate skill of Dr. Lindley, or in the natural sagacity of Sir Joseph Paxton; his name is Mr. W. Wood, “the scientific writer,” and his last thoughts and doings among the spring bulbs will be found in another page.

I have another secretary, who is also in the flower confidence of a peeress, who is, herself, a first authority in taste and judgment in the flower garden; he has told me, just at the eleventh hour, that they designed something new last season, and have been preparing to bring it out this summer, that if I go into the country to see it in its prime, I shall be allowed to say what I think of it, whether good or not good, with their names and the name of the place. It is a new ribbon on a very long border, which I think is straight, and so situated, that a person standing on the walk in front of it, would have his, or her shadow parallel to the lines in the ribbon, about half-past three in the afternoon. I inquired particularly about that, as I am confident a great deal depends on the meridian of a flower-bed, or flower garden, or a flower border. The meridian of that border is half-past three in the afternoon, and a stranger going along the walk at that half hour, with the sun directly at the back of the head, would get the best telling view of the new ribbon.

It is a decided misfortune when one is compelled to bring company along a flower garden against the sun. Two most able critics visit the same flower garden at different times of the same day; the one reports most favourably of all he sees, the other can see little to praise; the difference is owing to the different points from which the sun-light struck upon the garden at the time of the visits; therefore, that is the first point to be considered, when one has the choice, in making a flower garden, or in making walks to and from it, or all round it. In the morning, the walks should lead with the sun at the back of the head one way, and in the afternoon go round the garden the other way, and the light will tell also from behind. The novelty of this ribbon struck me blind, as it were, and until I could see it along the meridian, in my mind's eye, I could form no judgment of how it would look; and I hold, that if the moving meridian, so to speak, were from half-past ten to eleven in the forenoon, the effect of that ribbon would be one-half more, if the effect could be measured, because flowers and flower gardens look so much better before noon than after.

The border for the new ribbon may be over 300 feet, but it is not much over that, and standing nearly east and west, it is seen to most advantage in the afternoon; the novelty is in having all the rows, or stripes, in variegated plants, but with a different tint of colour in all the rows. The first row, next the walk, is to be of

the *Variegated Alyssum*; the second row of *Geranium Brilliant*, the variegated form of *Tom Thumb*; the third row will be of *Flower of the Day* Geranium, which is more of an orange scarlet than *Brilliant*; the fourth row is to be of the old *Variegated Scarlet* Geranium, the one which is nearest the *Nosegay* style of truss and flower, and a different shade of scarlet from all the rest; and the last and back row will be of *Jackson's Variegated Nosegay* Geranium, a true *Nosegay* style of flower and truss, and a cerise shade of colour.

Now, supposing that there is some dark-green low evergreens, or fence, along the back of the border, or some way of marking a distinct boundary to this variegated ribbon, how will it, all look on its own merits? Or, how would you endeavour to improve it, in looks, without altering the style of it? Would a border from 50 feet to 100 feet in length look better, or worse, than this one which is over 300 feet long? Which would look better, a straight ribbon border from 300 feet to 500 feet long, or a curved border half the length, and the two ends not seen at once? There is a meaning, and a good deal to learn from a careful study of all these questions; that is, studying for the effects of the different arrangements.

The next thing is to find out the space which each line in the ribbon ought to occupy. When the ground colour is of one thing, or tint, or colour, as in this case, it makes very little difference in the effect, whether all the rows be of equal width, or not; they may be so, or any one of them may be twice as wide as any of the rest, and it is much the same way about the colours, as they are all of one ground tint; therefore, there is one very strong point in favour of this new style, without taking the effect into consideration, and that is, that anyone having the plants may plant such a border, without having the slightest notion of colouring a ribbon, so to speak. To compose a ribbon properly, is a very difficult thing indeed; some believe the thing to be the easiest style of all, and so it is, if the plants were all variegated, or if they were all green, and had the same colour, or ground colour, in the flowers; but when an artist comes to put five colours in a ribbon, and perhaps three or four more of tints along with them—some to contrast, as black and white; and some to heighten the value of others next to them, as dark crimson heightens bright scarlet, not by the contrast, but by the blending of the two into one, as it were;—I say, when that is to be done on a plain border, where every inch is seen at one glance, the thing is much more difficult than doing the very same style in any shaped bed; for we must remember the fact, that whatever will do a good ribbon, will do a good bed exactly in the same proportions, making the back row of the ribbon the centre row in a bed, and then doubling each row from the centre, if the bed is long, or round the centre plant, if the bed is a circle.

There is no public garden, that can be referred to, where more than three colours are used in beds; but in many of the first-rate private gardens, there are as many as seven colours blended together, and in different proportions of breadth, to form one single bed. But the simplest way to judge of the effect of any arrangement for a ribbon is, to give the mind's eye a touch of the ribbon as a separate bed; say a circle, as the best and simplest bed. On the other hand, that which would do an excellent bed, might be a sorry complement for a ribbon; just say an ordinary bed, with a foot wide of *Mangles's Variegated* Geranium, two feet of scarlet Geranium, and the centre of pegged-down *Ageratum*. That bed might not look just the thing next to a bright purple *Petunia* bed, or next a rich yellow *Calceolaria* bed, but as a bed by itself no one could find fault with it; one might say he did not

like it, but liking, or disliking, has nothing to do with rules or principles.

Principles can be applied in so many different ways in planting, that no one need have a bed he dislikes, or blame any known principle for compelling the use of an obnoxious bed, for the sake of any style, or arrangement of beds. The greatest error in planting flower-beds, which pretend to a style of art, is in the edgings; in nine cases out of ten the edgings are mere *pimping* lines, whereas the edging, to give effect by contrast, ought to stand as one-fourth of the width of a long bed, or one-eighth of the diameter of a circle, as a thumb rule; that is to say, if your long bed is twenty feet wide, the band of a different plant round it should be five feet wide, instead of being a mere line, which has no meaning in principle. But, if this bed was a circle twenty feet in diameter, the rule is very different; the one-eighth of twenty is two and a half, and that would be the width of the edging—just one-half of five feet, the edging to the other bed. The way in which ladies calculate for edgings is by the one-fourth system; and, supposing all kinds of beds to be reduced to the oblong shape, when you tell a lady artist your circular bed is eight feet in diameter, or eight feet through, she will reply like a carpenter, and say that is four feet “on the side,” on one side of the centre plant in the bed. An oblong bed, four feet wide, has an edging one foot wide; but from the four to the six feet bed, the rule is arbitrary; a bed six feet wide will carry an edging fourteen inches wide only, and up to eighteen inches wide is the rule, for the largest beds, which I have seen measured for edgings; and I should say, on my own authority, speaking as a gardener, who has fought the battles of the planter, that six inches should be the narrowest edging of any flowering plant whatever. When we come to work in Box, and make it tell in a design, I consider a four-inch wide Box edge equal to one foot of a flowering plant. But those who are able to work in Box patterns, are those very heads from whom come the laws of designing all kinds of planting, and they stand in no need of our instruction.

The last part of the business of the day is by far the most difficult branch of the subject, and that is, to know the exact and actual distances at which all bedding plants ought to be planted apart; and that is just where I am most likely to break my back. When I come to the rule of “cutting according to your cloth,” and find that my flannel petticoat is not longer than my Scotch kilt, that will not do in planting; but I was never at a loss about running plants, like Verbenas and Petunias; if I had only ten plants of one of them for a bed, which required fifteen or twenty plants, I would first plant the ten at regular distances all over the bed, and plant between them with extra kinds, with a small stick to each of the latter, that they might be known, and be pulled up as soon as the true bedders are spread over the surface; and that rule I would still advise with all the strong kinds of Verbenas, because in nine cases out of ten strong Verbenas are planted too thick for the looks of the thing, and they never bloom so well as when they have ample space. The best way to learn planting is this; to suppose all bed planting to be in single rows; then strong Verbenas would be safe at fifteen inches apart, and ten inches from the side next the walk, and eighteen inches from the next row; I would plant *Robinson's Defiance* at that distance anywhere, and to fill the rest of the ground, for a while, I would rather smuggle in other kinds, or annuals, even if *Defiance* was from late spring cuttings; dwarf Verbenas I would plant ten inches plant from plant, six inches from the side, and one foot row from row. If the plants were small, I would smuggle again, and I would train them and the Petunias the same planting day, for fear of

their blowing about. All Petunias may be planted at the same distances as strong Verbenas, but if they are scarce they may stand further apart. All Calceolarias and Geraniums must stand at distances according to the size of the plants, rather thickly planted, as they can be thinned early for cuttings, which are never too early.

D. BEATON.

PROTECTING, OR NOT PROTECTING, PEACH AND APRICOT TREES.

A GREAT variety of opinion, and of practice, obtain on this subject. Some of our best gardeners protect carefully, others equally successful, do not protect at all. In different gardens, nay even in the same gardens, trees as much as possible alike, as to the due ripening of the wood the previous season, the strength of the wood, the abundance of healthy fruit-buds, &c., will turn out quite differently, some producing abundantly under protection and non-protection; while others will fail under protection at one time, and without protection at another. In each case, where the matter is duly considered, great stress is laid upon the proper thinning-out and ripening of the wood the previous summer and autumn. Without that, there is always the risk of not getting a crop from the parts of fructification being immature, or the principal part being altogether defective. On such crowded soft wood that even showed bloom strongly, and apparently all right, I have examined hundreds of blossoms that had no trace of a young fruit in embryo, and, of course, no treatment could make them productive. The maturing of the wood is, therefore, of first consequence in any circumstances, but it does nothing to settle the question—Which is preferable, to protect, or not to protect?

I presume that the answer must be greatly regulated by the circumstances of the case, the position of the garden, as respects lowness and elevation, and its free exposure from all directions, as its comparative warmth and shelter by surrounding woods. There is one argument in favour of non-protection, and a powerful one too, if only we could always secure a crop by it, viz., that the trees undergo no debilitating process, such as, to a certain extent, they must experience under most modes of protection. Gardeners frequently complain, when, after protecting carefully, until towards the end of May, and securing an abundant crop, that then, frequently, a sharp frost afterwards has injured the whole, when they might have escaped uninjured, if they had not been rendered tender by previous codling and covering. On the other hand, when a crop is destroyed by frost, and no protection has been used, the gardener has the unpleasant reflection that some simple mode of protecting might have prevented the disappointment; and there are plenty of employers who would not scruple to say so, and yet would grudge, or forbid, the outlay which would be necessary to secure proper canvass, or calico, coverings. Even when using such simple modes, our success may not be so great as we anticipate, but it is so far consoling to be able to say, “We did what we could.”

The subject, then, is one well worthy of consideration, and in order that many gardeners and amateurs may be induced to give us the results of their practice and observation, in the shape of an expressed opinion, I will commence with stating what is my own opinion at present, but which will ever be influenced by the experience and observation of others; and also mention some of the practices that obtain in this immediate neighbourhood, merely premising, that this season, so far as I can learn, there is the appearance of an abundant crop in most places. For though the frost was frequently severe when the trees were in bloom, the weather was generally still and dry, and though

many blossoms were blackened and destroyed, where no protection was used, there were plenty left unopened and unhurt to secure a crop.

The gardens here being very exposed, and standing on elevated ground, I have generally resorted to some mode of protection, and in cold seasons have given that protection to Pears and Cherries as well as Peaches. So far as my observation and practice go, I prefer, as the medium of protection, strong canvass, or calico, pulled up and down as desirable, easily and quickly; and this I would use as first recommended, I believe, by Mr. Errington, for retarding as well as protecting. For the purpose of retarding, the coverings should be placed against the walls as soon as the spring sun begins to swell the buds in the least, in order that, by their shade, the wall may be kept cool in sunny days. For such retarding purpose, the blinds should be drawn aside at night, and in all dull cold days. The advantages of this retarding, are these:—The fruit-buds will open later, when we may expect better weather for them, and they will come stronger and more vigorous, owing to a more reciprocal action between the roots and the branches, as the soil will get heated about as soon as the wall. In common circumstances, there is a vast difference in a sunny day; the wall is hotter than a forcing house, while a few inches below the surface the soil is little warmer than an ice house. This contrast between the branches and the soil is generally so great, that when in full bloom, and the sun is very hot, the trees would often be greatly benefited by a net, or gauze veil, shading them from the great heat and light for a few hours in the middle of the day. With this exception, as soon as the flower-buds swell to the opening, the mere retarding must be lost sight of, and the same covering turned to the protecting and the forwarding of the crop, keeping them down at night and during inclement days, and removing them in all fine days. As, when drawn up, or down, they constitute no eyesore, they should not be finally removed until June; as, even in that month, we have seen fruit nearly as large as small Walnuts blackened quite through by frost.

For want of such cloth, I have frequently used old hurdles, thatched thinly with straw, or stuck full with Spruce or Laurel boughs, for the purposes of retarding and protecting. This season, March brought the trees so suddenly forward, that, amid a variety of other matters, I altogether lost sight of retarding, and before the trees could be nailed, they were swelling and opening their blooms.

Thin Spruce boughs, from which the foliage had mostly fallen, common netting and Nottingham lace netting were suspended over the trees, for the double purpose of blunting the force of the sun's rays, and preventing the free radiation of heat from the wall at night, to keep all right before hurdles, thatched with boughs, could be provided. Good Friday morning came, with its 8° below the freezing point, and almost every bloom that had no protection was blackened to the core. The afternoon brought a storm of hail and snow, and as the wind threatened to get to the north and the east, the trees were roughly covered before night with boughs and mats. The following morning was milder, but the one succeeding, and several others, were from 8° to 10° below the freezing point, and the blossoms exposed were so affected, that I incline to the opinion, that without any protection at all I should have had few young fruit to look at, instead of having them as thick as they can cluster along the shoots. The hurdles were not got a bit too soon, as a brisk wind made free with the Nottingham lace netting, which had previously done good service, and left nothing of it in sight but small pieces, where the tacks had been used.

Of all retarding and protecting material, that is to be left against the wall without moving, until finally taken away, when all danger is over, I prefer this Nottingham netting—much the same as that advertised as Haythorn's Hexagon—as it is sufficiently thick to blunt the force of the sun's rays, and also to resist from four to six or more degrees of frost, if the weather is at all dry and still. Poles had been placed to keep it from the wall, and along these poles (about their middle) a rod was fastened longitudinally, and against that rod the hurdles, with green boughs in them, were placed upright, enclosing a good space between them and the wall. These were on in bad weather, and taken off in fine weather; and now though not removed, on this 10th of May, they have not been used for more than a fortnight. As already hinted at, the crop might have been secure in such a season without any trouble at all, and then I should not have been more fortunate than some of my neighbours. These are the circumstances that render it desirable, that a great variety of results and opinions should be presented to the gardening public, in something of a tabular form. I will mention a few instances in illustration of this.

The gardens at Luton Hoo are not much different, as respects elevation and soil, from this place. The chief difference consists in its being much more sheltered, by wood, in every direction. The greater comfort and warmth, in cold weather, are easily perceptible by the senses. Mr. Fraser has used no retarding nor protecting medium for several years, and has had good crops. This season, though a great many blossoms were injured about Good Friday, there were such abundance left that the fruit is now set very thick. Some years ago when protecting, owing to a particular party at the house, it was desirable, somewhere about the third week in May, to remove all the protecting mediums; and a night or two of sharp frost, shortly afterwards, did more harm than he imagined would have been done, if the trees had received no covering whatever.

Stockwood Park, near Luton, also stands upon a similar elevation, and is almost as well protected, except from the south and south-west. Large coping boards, of a temporary character, about fifteen inches wide, and with a dip so as to throw a good amount of rain past the trees, are used for the Peach and Apricot walls, but there has been no other protection given; and though a good number of blossoms were injured, enough escaped to secure a thick setting of young fruit.

Kimpton Hoo kitchen garden, it will be recollected, is comparatively low, and near a small stream. Mr. Cox does not think he would be safe without protection: he uses chiefly the Nottingham lace-thread netting referred to. When I saw him the other day, he told me, that the fruit was set thicker than ever he saw; though, notwithstanding the shelter of the netting, many blossoms were destroyed about Good Friday.

Hexton House garden, it will be found on referring to the description of it, lies in a hollow, and water at no great distance. Mr. Watson uniformly protects; he considers that, in most seasons, he would have no fruit, if he did not do so. He generally protects all the best Plums likewise. This season, he says, the fruit on the Apricots, &c., is set like ropes of small onions, so thick are they. He uses no cloth, netting, or such other shelter: he also disapproves of Spruce branches; the foliage comes so soon off, and there is a good deal of trouble in getting it out from the young and tender shoots. He uses Laurel branches, in rather small pieces, neatly put all over the trees; the leaves do not fall, when they are dried and withered. Many would

imagine, that the large leaves would keep the blossoms too dark, when fully expanded; but this is not the case practically, as enough of air and light passes in by the sides, and the openings between the leaves, to keep the flowers robust, and to cause them to set freely. When thus set, the size of the leaves is of importance, in keeping the fruit comfortable, by preventing radiation. Dull weather is chosen for, first, the partial, and then the total removal of the Laurel branches; but, with the exception of robber, strong, and foreright shoots, disbudding is done but very partially, until all danger from frost is over. The young shoots thus, for a time, take the place of the Laurel branches.

From the notes of correspondents, the inquiries of amateurs, the complaints and hints of gentlemen, and my own observation as to the practices that obtain in many large places, I might multiply these diversified examples to any extent. It would, however, be much more satisfactory to have the opinions, and the circumstances, and the plans of others detailed; that thence an inference might be obtained, either that, under many circumstances, the want of protection would in general involve no want of prudence, or careful foresight; or that, in other circumstances, retarding and protecting would constitute the elements of safety: and if the latter idea should be held by a considerable portion, then it would be well to ascertain how far, and how much, moveable mediums of protection are superior to those, like branches, that are fixed, and permanent for the time.

R. FISH.

THE GOOSEBERRY—ITS ENEMIES.

Most of the readers of THE COTTAGE GARDENER are, doubtless, but too familiar with the destructive character of the *Gooseberry caterpillar*. It is not alone this character, to which I would invite attention, but also to the extent of its ravages. In these parts it has been on the increase for years, and about the Metropolis I am informed, on respectable authority, that many acres of bushes have been nearly destroyed in various directions.

It is affirmed that Mr. Manser, of Kew, a great market-gardener, last year lost half a dozen acres in his grounds; and that those great market-gardeners of the Fulham fields, Bagley, Willcox, Matyear, &c., also suffered to a considerable extent. In the extreme south of the kingdom, as well as the north, there are loud complaints, and if something is not done to stay their ravages, the consequence may prove serious indeed; for it may be called a national fruit, and especially the poor man's fruit.

Soot has been recommended for some years, but, strange to say, it has only of late received a fair trial; I suppose, because we are too familiar with it, and it is inexpensive. As I have suffered exceedingly during the previous two years, from the ravages of this pest, I determined, last spring, to give the soot a thorough trial. Our gardens here are in two main divisions, each a square, and surrounded by a wall; and in both divisions there are Gooseberry bushes, nearly 100 in each, young and old. I, therefore, concluded on dressing all the trees in the south division, and leaving the other undressed. I commenced operations the moment they came into leaf, and smothered the trees with fresh soot; not the burnt-up soot which has been burned over and over again, but fresh, black, woolly-looking soot, which, indeed, alone contains its full share of properties. In about a fortnight, however, the soot had become much dispersed by rains and wind; and, although I saw no signs of the caterpillar, yet I felt extreme jealousy. I, therefore, had the bushes dressed again, and from their having been

much infested with red spider, I threw a few handfuls of sulphur amongst the soot. But I did more, I had the bushes syringed with soft-soap water previous to dusting them.

The soap water was intended to make the soot adhere, and this it accomplished as far as desirable.

I have now to report, that I never had my bushes in better order. I will not affirm that there was no caterpillar, a few certainly made their appearance, but they were so rare, that we might hunt many bushes before we found a score of caterpillars.

On the other hand, the northern division of the garden was much infested, many of the bushes being half stripped. And this shows, that in experiments undertaken with a view to come at solid facts, we should always take care to represent both sides of the question. Our readers will see, that this shows well in favour of soot, and when we consider that the latter is so useful as a manure, and, withal, so easily obtainable in *all counties*, and under all circumstances, it will be obvious, I think, that it becomes all parties interested, to take care that their soot is husbanded in due time to this very end.

Of course, I cannot, under one season's trial, pledge myself that the thing is conclusive. I have simply detailed facts, and shown, perhaps, a bias, to which I freely confess, in favour of soot; and that as will appear for a double reason.

But, after all, I little doubt that the best plan would be to attack this pest in the pupæ state; and, under this impression, to dig in, or otherwise get rid of, the surface soil beneath the bushes. This is no idea of mine originally, neither by any means new; it was suggested strongly by Loudon, or some writer in his "Magazine," a score years since, when the whole question underwent much consideration. It seems to be a well-recognised fact, by persons versed in natural history matters, that when the caterpillars have attained a certain maturity, they in due time descend, and burrow in the soil beneath the bushes; there they spin cocoons around them, and from these emerge both summer flies and those for the ensuing spring.

These things admitted, it is pretty obvious that two distinct periods offer themselves for operations on the soil beneath the bushes; the one, probably about the beginning of July; the other, any time through the winter.

For my own part, I shall operate round all my bushes, if all be well at the end of September; or, in other words, as soon as I perceive the foliage beginning to decay; and, in due time, I will inform the Gooseberry readers of THE COTTAGE GARDENER of the mode of operation pursued, with ultimately its effects.

I must now advert to another most serious enemy of the Gooseberry bush—the red spider. This foe is more insidious by far; for whilst the devastations produced by the caterpillar are speedily manifest, a bush, or tree, is generally three parts ruined before most parties are aware of the damages by red spider. I have seen cases within these two years, in which these two garden scamps have fought against each other in the work of destructions; knowingly or otherwise.

I would advise parties to look sharp after this spider, and to use, by all means, sulphur in the extirpation of it. We know of nothing better at present, and the worst of it is, that sulphur is rather expensive; however, we must set our heads to work, and try to economise it. I can think of nothing more likely than a combination with soot; and, in such a case, a couple of pounds of sulphur might probably prove sufficient for a wheelbarrowful of soot. And here, let me observe, that some management is required as to both sulphur and soot; unless they are both in a subtle and lively state, when applied, the labour will be only half per-

formed: the sulphur especially; this, unless rendered very dry by an oven, or otherwise, will not readily ascend into the various portions of the bushes; and, of course, on its nice divisibility, economy, as well as efficiency, much depends.

The operator, in delivering it out, cannot keep his hand too low, for the rogues, in the main, may be found much on the back of the foliage. It requires, too, a plucky character to perform the operation: those clumsy fellows who do not know, or who do not care, that they have a wrist joint, and another at the elbows, are not fit for this procedure. It requires a sharp jerk with the hand—the sharper the better; and the man who applies it must not care about his complexion, for half an hour: better to be rendered somewhat obscure, by this affair, than by the blowing up of a powder magazine at Lucknow. R. ERRINGTON.

PECULIAR NOTIONS ABOUT PRUNING FRUIT TREES, AND OTHER MATTERS.

DIVERSITIES of opinion have, from time immemorial, existed amongst all classes; and so generally is this approved of, that those who strictly adhere to well-established modes and maxims, are very often stigmatised as being prejudiced in their ideas. And as this class comprises a large number of the unlettered working population, who steadily move on in the same way their forefathers did, it might be worth while inquiring, whether prejudice was confined to them or not; and as much of the material wealth of the country passes in some way or other through their hands, a cursory view of some of their notions may, perhaps, establish the fact, that after all they are much nearer the truth than many that would be teachers; and, supposing they were to take the learned classes to task, that the latter would be obliged to admit of many serious errors they had made. A few years ago, a large portion of the educated classes in this country believed in mesmeric influences, and lectures and other demonstrations nearly elevated the trick into the dignity of a science. Some of its advocates went a step farther than that, and not content with the influence the invisible spirit seemed to exercise over animate bodies, they transferred it to bodies of other kinds, and hats, tables, and other things, were said to be all possessed with the invisible spirit of locomotion. This latter doctrine certainly gained more disciples than the first, and “table turning” was more fashionable than billiards or bagatelle; and, though some shook their heads and wondered, there were more believers in this affair than thought it prudent to admit it, after the bubble had burst. Working men’s inability to give a reason for the course they pursue, in their avocations, was not worse than this, as they might be unable to express the reason why, though they perfectly comprehended its bearing. Now, in practice we often see this exemplified; some one courting popularity advances something or other very plausible, and dishes it up with “facts and figures” (these useful ingredients in financial cookery), and for a time the thing takes, whether it be a manure or a medicine. John Bull will not have it unless it is paraded before him with great display, and though disappointed in the result, the next applicant for his favour is equally likely to be patronised, provided he be only extravagant enough in his pretensions. This digression on social customs has, perhaps, little to do with the subject-matter of this paper; but it is here given to exemplify the versatility of many of our actions, and to account for the diversity of opinions that now exist on one of the most important branches of horticulture—fruit growing.

Only a few years ago, the universally-received opinions of all fruit growers, was, that all deciduous fruit trees ought to have a considerable space of ground to grow on, and their roots allowed to ramify in whatever direction Nature inclined them. This idea, with but little variation, was indorsed as patent for many generations; while fruiting plants of humble growth—as the Pine and the Melon, were to be dealt with as circumstances admitted. The Pine, more especially, being always grown in pots. This state of things has, however, been attempted to be upset by some revolutionists, who tell us we are all wrong, that our Pears, Plums, and Peaches ought to be grown in pots, and our Pines planted out into a proper border. This reversal of existing things has not, however, been generally received, and some of its advocates are abandoning their ideas, or modifying them so as to suit other things. Orchard houses now are widely different from what they were first set forth to be. Trees in pots were found not to bear so well as trees planted in the ground, consequently, to transfer them there was said not to alter the name of the house, but it certainly very much alters the condition of the tree operated upon, and is, in fact, a return to old-established rules again.

Leaving it for others to determine how far the term Orchard house ought to be applied, let us take a glance at the treatment out-door fruits often receive, and notice the different views thereon. Standard Apple, Pear, Plum, or Cherry trees, are planted indiscriminately on some grounds, where the fruit is wanted for the use of the family, but in some others, where a profit is expected, some attention is paid to the probability of success; and, in the latter case, the general defect in the management will be found in omitting to do certain work that ought to be done, rather than in doing what is absolutely wrong; but it sometimes happens, the will-be-doing-man of business is the offender. Pruning, or dressing, is carried to excess, and lack of success is the result; for instance—let us look at extremely neat and close-pruned trees, they bear little or nothing. I can point to about twenty umbrella-trained Pear trees of good kinds that have not, during the last ten years, averaged a produce of half-a-dozen Pears each, although the soil and other circumstances seemed to favour their well-being. Still it is an admitted fact, that more or less cutting or pruning is required, to make a tree fruitful; but the amount, as well as the mode of doing it, are sources of much discussion.

I think I have before stated in these pages, that the opinion of many fruit growers in this neighbourhood is, that the climate or season (in this particular neighbourhood at least) has undergone some change, which is detrimental to the fruit crop, and their assertions are, in a great measure corroborated by the fact of the crops of the last ten years, or more, being inferior to any similar period, of which any account has reached us. To combat this evil, some new and hardier varieties of fruit have been brought into cultivation, and some old ones abandoned. This is more especially the case with Apples. But the result is, that some extensive orchards which ought to have been in full bearing now, are being destroyed, and but few new plantations made. This state of things, however, does not alter the pruning of existing orchards, where they are said to require it; and a few points of the practice here adopted may be serviceable.

Very old Apple and Pear trees, even when fruitful, are impatient of the knife; the general feeling amongst fruit growers being that they will not endure much amputation. This opinion seems to be often confirmed by practice, for we often see old thick-set mossy-headed trees not much improved by a severe cutting;

like an aged and infirm human being, they do not prosper when subjected to very harsh treatment. A young healthy member will undergo a surgical operation which would be death to an older one, hence the impropriety of expecting to make an old tree into a young one again; but as careful prunings seem necessary for the tree, as medicine does for the human being, let it be gradual, and not all at one season; they are young trees that I more particularly call attention to, these being most operated upon, and with varied success. The general practice here being to plant standard trees, six feet high, and with but very little heads; these heads consisting, perhaps, of less than half-a-dozen shoots of a foot long or more each, are allowed to remain uncut the first year, in order to let the root get well established, ere the top undergoes amputation. The same treatment, I may observe, is given to a Quickset hedge. The tree, being secured to one, or sometimes two stakes, does not grow much the first summer, and is very freely cut back the ensuing winter, after which a vigorous growth usually takes place; and the winter following is the one which gives rise to so much difference of opinion on the subject of pruning; the tree being then supposed to consist of numerous shoots, a yard long and more, and sturdy in proportion.

The practitioners of the old school insist that the centre of the tree should always be kept open, or, in fact, cut out, to enable the sun to shine into it and on the north side; but this practice, like many others, may often be carried out to a fault. A gentleman of my acquaintance, who has spent a long life amongst the fruits of the neighbourhood, and cultivates them very largely, is of opinion, that cutting out the centre of an Apple tree is in direct variance of the laws of Nature. Much cutting, while the tree is in a very vigorous growing state, he also forbids, and grounds his practice on the well-known fact, that cutting out the centre of a tree gives rise to a multitude of useless spray wood in that plan; to be repeated when the same is done again. He, therefore, allows the centre to grow as well as the side, and a nice uniform-shaped tree is the result; a little thinning is done, and some cutting back, but not much; he being of opinion, that such undue checks are the sources of premature old age, as the plant must find vent in some way for its surplus sap. He thinks it best to allow an open standard tree full scope to grow, and when Nature checks its farther advancement, by throwing it into a fruitful state, the tree is then a full-sized vigorous one, capable of bearing the best fruit, and a store of health laid up for years to come.

The above remarks apply more especially to Cherry trees, which suffer most of any from the knife. Plums also dislike it, but even Apple and Pear trees, if expected to grow large and fine, ought to have something like fair play in their younger days; and we all know that trees, headed down repeatedly in a nursery, rarely make good trees; their efforts being so often thwarted, constitutional vigour declines. The gentleman mentioned above is particular, on all occasions, to have young healthy trees; very often those which have never been cut at all, as he is by no means an advocate for root pruning of open standards; as he justly observes, "if the right sort of tree be planted in the right place, and in a right manner," it will be sure to prosper; it is hopeless expecting a good result under contrary circumstances, as an open standard tree, unlike one on a wall, or in a hothouse, is influenced solely by natural causes, over which cultivation has but little control; and if you allow the top to assume a large growth, the root must keep pace with it; the case, of course, is different when trees are dwarfed for some purpose; in this case a reciprocity must exist between

the top and root; Nature, not man, holding the balance.

Before drawing the above remarks to a close, I may mention one often received erroneous opinion we hear daily expressed, that moss on fruit trees is the consequence of a superabundance of water in the ground; this is certainly not the case, as I can point to several trees suffering so, where water is not to be obtained by digging less than eighty or one hundred feet deep; that it is more prevalent in moist districts may be admitted, but is certainly not confined there. Like other parasites, this unsightly pest grows where circumstances favour it most; and when a tree becomes sickly, or diseased, or lacks that vigour necessary to resist it, there it plants itself. A liberal application of quicklime will check it considerably, and perhaps a renovating at the root by manure will be of service; but to entirely remove, or prevent it, is a problem not yet solved, and it is an undisputed fact that (in this neighbourhood at least) its growth has increased very much of late years; trees being now infested with it at an earlier age than they used to be, and, consequently, one of the opinions advanced by elderly people is, that some change is going on in the atmosphere we move in less favourable to the growth and perfection of fruits than it used to be: of this I am not old enough to give an opinion, but the idea is not confined to old, unlettered, working men; but some of those who have studied the sciences, which carry their researches back to the antediluvian period, assert that such changes are going on; but whether so rapidly, as to be appreciable within the lifetime of even a Methuselah, is very uncertain.

J. ROBSON.

NOTES FROM THE CONTINENT—No. 23.

HANOVER.

EARLY in the winter business rendered it necessary for me to make a journey through Hanover, into the Rhine provinces of Prussia, and thence into Belgium; but the shortness of the days, and the hurried manner I was obliged to go from place to place, made it difficult for me to see much of the horticulture of the districts through which I passed. I saw, however, as much as I could, and it is possible that my notes, though doubtless imperfect, may interest your readers.

I reached Hanover late in the day, but started as soon as possible afterwards for the Royal garden at Herrenhausen, of which I had often heard glowing accounts. It is about two miles from the town, the road being perfectly straight; and, as it is planted with a double avenue of Lime trees, must make a magnificent drive in summer. Upon the right I passed Mont Brilliant, the summer residence of the blind King. Herrenhausen speaks well for the patronage horticulture receives from the hands of Royalty in Hanover; indeed, the King takes great interest in gardening, and has lately sent a collector to tropical America, in order to enrich the hothouses of this garden; and, although debarred the pleasure of seeing the plants that may be sent home, yet he listens, with a smile upon his countenance, to the collector's letters, and a description of his plants.

I have no hesitation in saying, that this is decidedly the best royal garden in Germany, and very much in advance of some which make greater pretensions. Its general features are those of a botanic garden, but it has not degenerated into a nursery like those of Saxony, nor is it in such a disgracefully neglected state as some of those in Prussia. Here everything was clean, and order everywhere apparent.

The principal point of attraction is the Palm house, a noble structure, and the plants in every way worthy of the building. In the centre stands a plant of *Livistonia Australis*, twenty-three feet high, and throwing out its large fan-shaped leaves on all sides. Around it many other members of the regal family of Palms are arranged, and whether seen from the walks below, or the gallery above, the effect is quite imposing. Among the more remarkable of the plants, I noted a fine *Plectocoma Assamica*, one of the half-climbing section of the family; the mid-rib is extended some ten or twelve

feet beyond the leaflets, and is armed with sharp hooks, by which it naturally elings to other trees, and thereby supports the stem which is not strong enough to stand erect. In this we see one of those marvellous adaptations of means to an end, which meet the eye of the student of Nature at every turn. Near it was a plant of the very rare *Areca Banksii*, named after the great circumnavigator; *Areng saccharifera*, the East Indian sugar-producing Palm; *Chamadorea graminifolia*, most elegant of all the tribe; and, trained to one of the pillars, the climbing *C. scandens*, the leaf-stalk of which is curiously jointed, so that the leaves droop as though broken. A fine young plant of the monster Dragon tree (*Dracana Draco*), of which we have all read; and some noble Serew Pines, particularly *Pandanus utilis* and the long-leaved *P. furcatus*. These deserve to be more cultivated; in the reports of English Flower Shows, I have only seen mention made of the dwarf *P. Javanicus* among the foliage plants.

There are many other houses containing a vast collection of well-grown plants, but I did not notice anything very new among them. I must not, however, omit to mention the collection of standard Orange trees, the healthiest I have seen. In the same house were some excellent standard Myrtles, Bays, and Portugal Laurels; and several cork Oaks, which will not bear the winter here.

Although almost dark before I left, I had a glimpse of the flower garden, which appears to be extensive and well laid out, but at the time of my visit looking, of course, dreary enough. A good deal of praise has been bestowed upon the fountains and jets-d'eau here, but one feature ought decidedly to be done away with, and that is the puny artificial rockwork, combined with the highly-finished architectural balustrading of the terraces.

Below the flower garden, are walks between high closely-clipped hedges, in the most artificial and almost painfully-formal style of gardening. In one place these hedges are formed into a sylvan theatre, which has occasionally been histrionically used.—KARL.

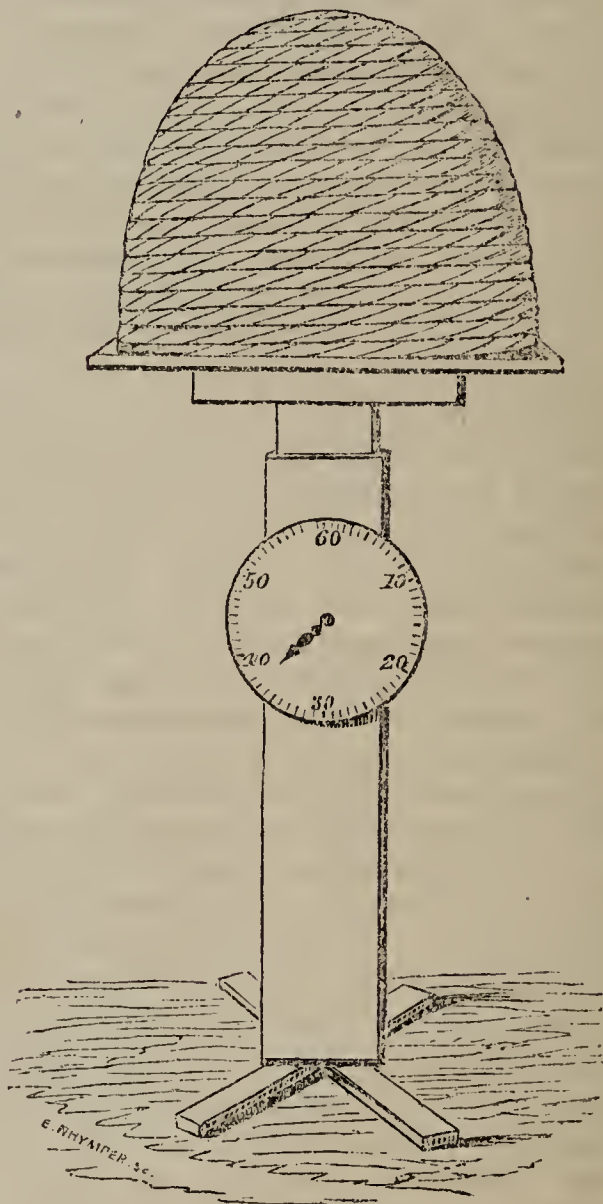
EARLY TULIPS—CATALOGUE ARRANGEMENTS.

EARLY Tulips are now (May 3) at their best, and if the weather was but genial enough to expand their cups, they would be very beautiful indeed; even in dull weather they are very effective. I have long been a great admirer of the section in small selections; but I now feel certain of what I have long predicted, that for a season in early spring the flower garden may be so garnished with these flowers as to be more brilliant than in autumn. The present chilly, cloudy weather is nearly as unfavourable for these gay harbingers of spring, as were the previous dry, parching days, when, for want of more surface moisture, the blossom begun to droop each afternoon, and since which some of the flowers show the parching effects of too much sunlight by the burnt-white margins. Some kinds are more subject to this than others. Again, the early morning hours, if fine, with sun from eight to eleven or twelve, are, in my opinion, the most favourable ones to take the true effect and shade of colours before the strong mid-day and afternoon sun imparts such a reflected glare of colour which does not deceive the eye under a medium and softened tone of light. There is also such a disparity of colour between the exterior and the interior: in favour of the former in a majority of kinds, especially in the parti-coloured yellow ones, that I take it as a general rule that degree of merit in beauty must be taken from the interior, and in such I simply give the ground colour in connection with the brilliant or rich-coloured bands of colour within; but in the pure white and shaded-white grounds the beautiful cerise-crimson stripes and feathers are nearly, if not altogether, as clear outwardly as inwardly. All ground colours having the edge of the sepals well defined in a distinct colour are, more or less, picturesque and effective outwardly; but where the ground colour gradually merges into a lighter shade, the merit of such has to fall back upon the tint of colour forming the general basis inwardly. I make a distinction between ground colour and surface colour; the former applying to the predominant one, as to quantity or extent; and the latter to the stripes, or flakes,

or bands, laid on, though this distinction is not to be specifically applied to the present subject.

In our forthcoming bedding-plant and soft-wooded catalogue, I have, for the first time, attempted to give more definite terms (by adapting a rule) to the descriptions of *Geraniums*, &c. You know the *very* irregular style hitherto given by catalogue-makers—sometimes commencing with one feature, and sometimes with another, without any definite term to express the ground colour; and I am not certain that I have always been clear and uniform in my application of terms.—WILLIAM WOOD, at *E. G. Henderson and Son's*, Wellington Road Nursery.

INDICATOR BEE STAND.



As I neither wish, nor expect, to realise profit by the sale of the indicator bee stand, which is advertised in connection with my name, I may, perhaps, be permitted to call the attention of bee-keepers to its object, and construction. Last year I suggested, in the pages of a popular journal,* the advantage to those who make a study of the honey bee, of some means of indicating the progress of a colony during the season, so as to obviate the clumsy expedient of a steelyard. The plan on which I then proposed to construct an indicator, namely, by means of a spiral spring, I was assured by many friends would fail utterly, and for a time I gave no further attention to the subject. On consulting lately a clever mechanic, he assured me my proposal was in every way a practical one, and in proof of it he produced a bee stand, after the model shown in my sketch in the article referred to, and it proves to be just the thing that was required, to render the daily observation of the bee additionally instructive and pleasurable. As any one handy in the use of carpenter's tools might make such a stand, I will briefly describe it. The hive board rests on a square solid piston, which plays freely up and down in a hollow post of inch stuff, to the front of which is affixed a dial plate. Inside the hollow post, just below the dial, is a cross piece, on which rests a spiral spring, tempered to bear a pressure of sixty pounds. The hive with swarm is to be placed on the stand, and the weight, which the index indicates, is to be noted down. As

* "National Magazine," No. 44.

the season advances, the gross weight of honey, comb, &c., will increase, the hive will sink, and its action on the spiral spring will cause the index to travel and register the amount. Thus the increase of weight during a given week of fine weather, in the height of the season, will be proclaimed on the dial, in a manner at once pleasing and intelligible; and if several of such stands were placed side by side, the progress of the stocks on them could be compared from day to day. As there is a play of only three inches between the bottom of the hive board and the top of the stand, the action of the spring cannot, possibly, cause any injurious jerking upwards, on the removal of a heavy super, or any other operation, which might materially increase or decrease the weight. I have ordered some to be made to register as high as 100lbs., though such will not be wanted in any great number.—SHIRLEY HIBBERD.

FLORISTS' FLOWERS.

THE PELARGONIUM.

CULTURE FOR MAY AND JUNE.—These gay-flowering plants will now be showing their blossom-buds. If the plants are healthy, and in small pots, they will flower much finer if they are shifted into a size larger pot, but this must not be exceeded; care should be taken not to over pot, for if that is done, the foliage will preponderate over the bloom. It will be more prudent to give support in the shape of weak, clear, liquid manure. This may be applied with advantage to plants already in their blooming-pots. Even this stimulant should be withheld when the blooms begin to open. No artificial heat is useful to these plants, except in frosty weather, or when damp and rain prevail. Whenever artificial heat is given, air should be given also, if not actually frosty. The heat will drive out the damp, if the upper air holes are opened. Keep every part of the house quite clean and sweet. Clear away all dead or decaying leaves. If the healthy leaves are dirty, or dust on them, they should be well spunged, and the glass should be well washed also, both inside and out. The stages and paths should also be kept quite clean. In very hot sunshining days, the blooms should be shaded with a thin gauze, such as Shaw's Tiffany, which is, I think, the best of all for shading purposes. New varieties require a close attention on their arrival at the purchaser's residence. Unpack them carefully, and pick off all the litter of package from the soil and foliage. Then wash the latter with a sponge and clean water. Then, as soon as the leaves are dry, stir the surface of the soil, and put them in a light, airy part of the greenhouse, for a week. During that time provide a sufficient quantity of good turfy loam, and hotbed manure a year old. Mix these together in equal parts, and add some silver or river sand. Then examine the plants, and repot them into pots two sizes larger, if they are healthy and vigorous, or one size larger if they are weakly. At this time of the year, this one repotting will be sufficient till the bloom is over. Let this be borne in mind—plants purchased this spring will not form fine plants and large trusses of bloom this season. Therefore, the florist will prepare his new plants for blooming in first-rate perfection in 1859.

Cuttings.—Where they can be had, may now be put in. The large-flowering varieties strike easy enough put into pots, placed in a gentle heat under glass. I have, indeed, struck hundreds in a border in the open air, but I prefer putting the cuttings in pots, for the simple reason, that when rooted they are potted off with less injury to their roots.

Many of the fancy class are difficult to strike in the ordinary way. I found them root most freely by putting the cuttings in very sandy pure loam, in shallow pans, or saucers, and placed on a shelf near the glass. The wood, I took care, was partially hardened at the base, and most likely many of the cuttings at their lower extremity actually came in contact with the pan, or, at least, rested on the thin layer of broken crocks used as drainage. This coming in contact with a hard substance is, I verily believe, of service, in inducing the production of that swelling at the base which we call callosity. I have propagated even the Orange tribe, hard-wooded though they are, by fixing the lower end of the cuttings close to the bottom of the cutting-pot. As soon as the cuttings of the

Pelargonium are rooted, they should be potted off into small pots. The roots are very tender, and soon snap off, if not carefully handled. When potted they should be put into a frame, and shaded for a few days, till fresh roots are made, to enable them to bear full exposure. Plants raised now, and repotted twice during the summer, stopped frequently, and tied out, will form excellent blooming plants next season.

I conclude these few brief remarks by giving my annual list of the best selected varieties.

TWELVE NEW AND SELECTED VARIETIES.

1. *Etna* (Turner), a rich-coloured, distinct variety; lower petals scarlet; top petals dark maroon, margined with a clear line of scarlet.

2. *Mazeppa* (Turner), a richly-spotted variety; lower petals rose-coloured ground, with a distinct dark-maroon spot on each petal; top petals dark maroon, broadly margined with rose. Form excellent, free blooming, and constant.

3. *Richard Benyon* (Hoyle), rich deep-orange crimson, with black blotch on the upper petals. Very good and a free bloomer.

4. *Rose Celestial* (Turner), a large flower with white centre; lower petals rose; top petals dark maroon, shaded to the margin with rose. Free bloomer and fine form.

5. *Rosy Gem* (Turner), bright cherry rose, novel in colour; top petals have a medium-sized dark spot on each centre; pure white. Distinct and striking.

6. *Lucifer* (Fellowes), colour rosy scarlet, with maroon blotch on the upper petals. Free bloomer and smooth edges.

7. *Imperatrice* (Turner), clear white centre; top petals orange, with dark maroon blotch; lower petals mottled with rose. Free and constant.

8. *Sprightliness* (Foster), lower petals rose, maroon blotch on the upper petals, broadly margined with orange scarlet; centre white, and clearly defined. A cheerful, free-blooming, distinct variety.

9. *Minnie* (Foster), lower petals bright-orange scarlet, top petals black, with a well-defined margin of scarlet. Size medium.

10. *Queen of Beauties* (Turner), an improved spotted variety; lower petals white ground, with a earmine spot on each; top petals dark, with a margin of white. Distinct and beautiful.

11. *Belle of the Season* (Hoyle), lower petals white, with slight pink shade; top petals cherry and salmon, with white margin. Cheerful and distinct.

12. *Festus* (Hoyle), centre white; lower petals orange pink; top petals shaded orange; large trusses, and a constant free bloomer.—Average price 15s. each.

FIVE CHOICE VARIETIES.

Agnes (Hoyle), a large, free-blooming variety, and very constant; rosy pink general colour, with medium black blotch on the upper petals; clear white centre.

General Williams (Turner), a bold, dark variety; strongly veined and painted lower petals; top petals black, with crimson margin. A noble flower.

King of Scarlets (Turner), ground colour scarlet, with medium black spot on the upper petal. Decidedly an improvement.

Prince of Prussia (Story), ground colour pure white, with medium blotch on the upper petals. A large finely-shaped flower, and a free bloomer.

Spotted Gem (Turner), general colour a soft rosy lilac, with distinct dark spots on each petal.—Average price 5s. each.

TWELVE SELECTED OLDER VARIETIES.

Admirable (Turner), ground colour rose; white centre; dark blotch on the upper petals. Very good.

Arab (Beek), rosy crimson, with maroon spots on each petal.

Carlos (Hoyle), large trusses; lower petals rose; upper petals dark, edged with earmine. One of the best.

Diana (Hoyle), ground colour pink; large blotch on the upper petal.

Governor General.—A well-known first-class variety.

Hermione (Hocken), a pure white-ground variety, with a dark blotch on the upper petals.

Lord Raglan (Hoyle), orange scarlet, dark blotch. Very good.

Mr. Hoyle (Turner), rosy pink, with a dark spot on each petal. Distinct and good.

Miss Foster (Turner), a highly-coloured variety. Fine form and constant.

Standard (Hoyle), general colour a clear rich rose, with dark blotch on the upper petals. Large and fine.

Una (Hoeken), a free-blooming white flower, with carmine spot on the upper petals. Very showy.

Wonderful (Hoyle), deep rose lower petals, shaded with orange; velvety-maroon blotch on the upper petals, margined with rose. Free and constant.—Average price 2s. 6d. each.

SIX NEW FANCY VARIETIES.

Aeme (Turner), deep purple maroon; white throat and margin; good form and habit. Has received many certificates. A constant fine variety.

Mrs. Turner (Turner), vivid-carmine rose; clear white centre and margin. Distinct, and decidedly new. Has obtained many certificates.

Princess Royal (Turner), silvery white; deep lilac blotch on the upper petals. A great improvement on its class.

Adela (Turner), rosy lilac, with white centre and margin. Good form and habit.

Claudiana (Turner), crimson upper petals; lower petals mottled with purplish crimson on a white ground. A pleasing variety.

Rosabella (Turner), upper petals bright carmine, edged with white; lower petals white. Good form and constant.

TWELVE OLDER VARIETIES.

Bridesmaid (Turner), light.

Carminatum (Turner), dark.

Crimson King (Turner), crimson.

Cloth of Silver (Henderson), light.

Celestial (Ayres), light rose.

Emperor (Turner), dark.

Evening Star (Henderson), light.

Helen Faucit (Turner), dark.

Madame Rougiere (Turner), dark.

Mrs. Colmar (Turner), dark.

Purpureum album (Turner), dark.

Queen of Roses (Turner), rose.

A few select FRENCH VARIETIES worth growing for their bizzare curious markings and colourings.

Chauviere, white, blotched and spotted with deep purple.

Eugene Duval, light purple, shaded with blood colour.

Emperor Napoleon, deep crimson shaded.

Godefroid, crimson, shaded with white.

Madame Pescatore, salmon, shaded with maroon.

Napoleon III., upper petals black, lower petals rosy orange, both shaded with red.

Pescatore, salmon carmine, shaded and spotted with dark crimson.

Perrugino, rose, shaded and blotched with dark maroon.

Roi de Feu, upper petals scarlet, lower petals vermillion, shaded with dark maroon.

Verschaffeltii, salmon, spotted and veined with rosy crimson.

—T. APPLEBY.

THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.

By P. V. M. F.

(Continued from page 85.)

SECTION 4.—AUTUMN MANAGEMENT, HONEY HARVEST, &c.

WHICH HIVES TO PLUNDER AND WHICH TO KEEP.—Let us now suppose that you are going to begin taking up your hives, as you have got your full number, and some to spare.

OF THE BEST TIME TO TAKE THE HONEY IN AUTUMN.—The best time to plunder hives, in most places, is towards the end of July, or the first week in August; that is, as soon as the bees relax, or cease their grand collecting of honey. Very little honey, and that, generally, of very inferior quality, is added to the bees' stores after the third week in July. It is better to wait, however, till the activity of the bees sensibly relaxes; this generally takes place simultaneously with the massacre of the drones. Another reason for plundering towards the end of July is, that at this time there is usually a large quantity of brood, or young bees, *unhatched* in the hives.

Many of these, if the honey-harvest be delayed, will have left their cells, when the general destruction of the bees takes place, in which case they will be involved in the general ruin; but by burning the hives in July, or very early in August, most of these, if carefully preserved, will live till the following spring, and greatly strengthen the stocks to which they are joined. Even where hives are sent off to the moors for the late honey of autumn, it is well to plunder them of *part*, at least, of their stores *before* they go; first, because the hives will thus travel easier; and secondly, because the best honey is always that collected in June and the earlier part of July. In hives with moveable tops, like those recommended at page 10, it is an easy matter to deprive the bees in this way of a part of their stores. Which are you to plunder, and which to keep? Your neighbours, you will find, *generally* take up their old hives, and keep their swarms; chiefly because their old hives are so weakened by swarming, that they are often too light in weight to live through the winter. They also take up the colts, and often the second swarms, or casts, for the same reason. But this is very poor work, and, therefore, I am against them again. As for second and third swarms, if you have followed my plan, there will be none of them in your garden. But as both your old hives and swarms will be heavy, and both might be kept through the winter, you may be puzzled to know which to keep, and which to burn. Now, the question is, which are best worth taking, and which best worth keeping. I will tell you. *Take and plunder your swarms, and keep your old hives*; for the swarms will give you most profit, as they contain whiter combs, and purer honey, and more of it; while the old hives have black combs, a great deal more dirt and waste, not so much honey, nor so fine in quality. Besides, remember the *swarms* contain the *old* queens, and the parent stocks contain the young and healthy queens, can there be a doubt, then, as to what should be done? Do you ask how do I know that the old hives contain the young queens? I answer, because *the old queens always go off with the swarms*. I never knew it otherwise. This is worth knowing, because you may always keep up a stock of young queens, who are *generally* the best breeders, by destroying your swarms every autumn, and keeping your old hives.

YOUNG QUEENS GENERALLY THE BEST BREEDERS.—I have said that young queens are *generally* the best breeders. As this implies that I do not believe it to be *always* the case, I advise the reader to destroy the old hive, rather than the swarm, in any case where he has reason to believe that the stock he intended to keep has a defective queen. This may always be known by the weakness of the stock. Or, perhaps, it is better to destroy all the bees of the stock together with their queen, and then to drive the population of the swarm that stands nearest into the now deserted stock. Care must be taken that their queen be with them; therefore, it is well to drive them first into an empty hive, and then into the stock. Before putting the bees into the stock it should be carefully examined, and a part of the empty combs cut away, if they are black or old. Then the bees may be suffered to hatch out the brood of one of the plundered hives; which will be all the more acceptable to them, if a little of the inferior honey in it be left for them to carry up into their hive. If this operation be done towards the end of July, they will often begin at once to make new comb in the place of the old that was cut away. Thus, besides the advantage of greater profit in honey, which you will have over your neighbours, by managing your hives in this way, you will have this other advantage, that your queens will never die in the winter of *old age*; and, therefore, your keeping hives will never perish, as other people's do, for that reason. Accidents will, of course, sometimes happen, by which hives will die without our knowing the cause; but it is in our power to avoid causes which we know may be fatal to them. It may also happen that, from some unknown cause, a good hive with a young queen, as well as with an old one, will give no swarm at all the next year. If so, then I would advise you to keep a good *swarm* in place of this stock the next autumn. But though, as a *general rule*, I say take up your swarms, and keep your old hives, it will be proper every five years to destroy the old hives, and keep swarms in their place: this is when the comb gets black and dirty with age. No hive should be kept as a breeding stock more than five years.

OF WEIGHING HIVES IN AUTUMN, &c.—Before you take up your hives in autumn, it is well to weigh those you intend to keep. If they weigh less than 30lbs. or 40lbs., according to their size, you had better not keep them. Most likely such hives have got poor queens, or there is something else the matter with them. I never advise poor people to feed their bees: it is an expensive and troublesome business to do it properly. Far better keep none but strong and heavy hives.

OF FEEDING BEES.—Although, as a rule, I do not like feeding bees, and do not advise the cottager to keep weak stocks which require feeding, still it is well to know how to do it; for sometimes in bad springs and late summers it is the only way to preserve hives, which were even strong in autumn. A good syrup is made of ale and sugar, or honey, prepared as follows:—Take a pound of brown sugar, and dissolve it in half a pint of ale in a saucepan over the fire. When it is cold, pour it, a little at a time, into the cells of an empty honeycomb kept for the purpose. The deeper the cells, the more syrup they will contain. Lay this piece of comb on the top of your hive, if it is flat. You must first open the hole, and then cover all over with an empty box, or hive, taking care that no stranger bees can get in. If you have round-topped hives, the plan recommended by Keys is the best. He advises the use of troughs made of joints of elder with the pith scooped out, after being slit down the middle. The ends may be stopped up with putty. These troughs, when full, are to be thrust in by the entrance hole every evening, and taken away again every morning.

(To be continued.)

KENNEDYA NIGRICANS AND ZICHYA LONGIRACEMOSA ON THE SAME PLANT.

F. W. S. begs to thank the Editor of THE COTTAGE GARDENER for the reply to his question respecting the *Kennedya* (COTTAGE GARDENER, April 20th). F. W. S. can assure the Editor that there is no mistake. The plant in question is growing in a 16-pot, and about an inch above the surface it branches off, one branch producing the dark flowers (*Kennedya nigricans*); and the other the orange and red (*Zichya longiracemosa*), covering together six or eight feet in breadth of the trellis on the wall of the greenhouse.

F. W. S. has examined the plant again, and encloses blossoms of the *Zichya*, with the remains of the *Kennedya*, which latter is now gone off.

Is one species grafted, or worked on the other? The plant is about four years old, and the *Kennedya* never showed itself until this year.

[The *Kennedya*, we conclude, has been worked upon the *Zichya*, but we cannot give a decisive opinion without inspection. It deserves examination. The two genera are nearly related.—Ed.]

ROYAL BOTANIC SOCIETY'S SHOW.

ON the 12th instant, the first exhibition of the season took place in the gardens of this Society, in the Regent's Park. Although the attendance, in consequence of the unfavourable weather, was rather small, we noticed many of the *élite* of the land.

The Roses especially attracted attention. The Azaleas and Pelargoniums shone with more than their wonted splendour, and these, with Cinerarias and other bright spring favourites, admirably arranged in the Society's magnificent tent, made a dazzling blaze of colour. Among the new floral curiosities we noticed a double Pelargonium, called *Gem of the Undercliff*; some very fine Himalaya Rhododendrons, a beautiful little Pimelea, and a choice specimen of the Banksian Rose, the slender branches being literally covered with the lovely yellow blossoms.

The following royal and noble personages were present:—Her Majesty the Queen, and his Royal Highness the Prince Consort, and her Royal Highness the Princess Alice, attended by Miss Macdonald, Miss Cavendish, General Grey, Lord Bateman, and Colonel Ponsonby; her Royal Highness the Duchess of Cambridge; her Imperial Highness Princess

Anna of Saxe-Weimar; Marchioness Maria of Aylesbury; Ladies Evelyn Stanhope, Hamilton, Daere, Chesham, Hare, Campbell, Jane Charteris, Caroline Stirling, Hulse, Molyneux, Dowager Willoughby de Broke, Ramsden, Fellowes, Otway; Duchess of Sutherland, the Countess of Chesterfield, the Swedish Ambassador and suite, the Austrian Ambassador and suite, Lord Henry Lennox, Bishop of Winchester, &c.

The prizes awarded were as follow:—

Extra Gold Medal.—To Mr. Dodds, gardener to Sir J. Cathcart, Chertsey, Surrey, for sixteen stove and greenhouse plants; to Mr. Gedney, gardener to Mrs. Ellis, Hoddesdon, for twenty exotic Orchids.

Large Gold Medal.—To Mr. Whitbread, gardener to H. Colyer, Esq., Dartford, Kent, for sixteen stove and greenhouse plants; to Mr. Woolley, gardener to H. B. Kerr, Esq., Herts, for twenty exotic Orchids.

Medium Gold Medal.—To Mr. Green, gardener to Sir E. Antrobus, Bart., Cheam, Surrey, for sixteen stove and greenhouse plants; to Mr. Cutbush, nurseryman, Barnet, Herts, for twelve stove and greenhouse plants; to Mr. Barter, gardener to A. Bassett, Esq., Stamford Hill, for ten stove and greenhouse plants; to Mr. C. Turner, nurseryman, Slough, for ten greenhouse Azaleas; to Mr. Barter, gardener to A. Bassett, Esq., for eight greenhouse Azaleas; to Mr. Keele, gardener to J. Batten, Esq., Woolwich, for twenty exotic Orchids; to Messrs. T. Jackson and Son, nurserymen, Kingston, for sixteen exotic Orchids; to Mr. M. Clarke, gardener to C. Webb, Esq., for twelve exotic Orchids; to Messrs. Paul, nurserymen, Cheshunt, Herts, for ten Roses in thirteen-inch pots.

Gold Medal.—To Messrs. Fraser, nurserymen, Lea Bridge Road, Essex, for twelve stove and greenhouse plants; to Mr. B. Peed, gardener to Mr. T. Tredwell, St. John's Lodge, Norwood, for ten stove and greenhouse plants; to Mr. Cutbush, nurseryman, Barnet, for ten Cape Heaths; to Mr. B. Peed, gardener to Mr. T. Tredwell, for eight Cape Heaths; to Messrs. Lane and Son, nurserymen, Great Berkhamstead, for ten greenhouse Azaleas; to Mr. Green, gardener to Sir E. Antrobus, for eight greenhouse Azaleas; to Mr. Carson, gardener to W. F. G. Farmer, Esq., for twelve exotic Orchids; to Mr. C. Turner, Slough, for twelve Pelargoniums; to Mr. Nye, gardener to E. Foster, Esq., Clewer Manor, for ten Pelargoniums; to Messrs. Lane and Son, for ten Roses in thirteen-inch pots.

Large Silver Gilt Medal.—To Mr. Rhodes, gardener to J. Philpott, Esq., Stamford Hill, for sixteen stove and greenhouse plants; to Mr. May, gardener to J. Spode, Esq., Hawkeyard, Rugeley, Staffordshire, for ten stove and greenhouse plants; to Mr. J. Reid, gardener to C. F. Gabriel, Esq., Norfolk House, Streatham, for six stove and greenhouse plants; to Mr. Green, gardener to Sir E. Antrobus, for six tall Cacti; to Messrs. Fraser, Lea Bridge Road, for ten greenhouse Azaleas; to Mr. M. Clarke, gardener to C. Webb, Esq., for eight greenhouse Azaleas; to Mr. Bray, gardener to Baron Goldsmid, St. John's Lodge, Regent's Park, for six greenhouse Azaleas; to Mr. W. May, gardener to J. Spode, Esq., for six exotic Orchids; to Messrs. Dobson and Son, nurserymen, Isleworth, for twelve Pelargoniums; to Mr. J. Wiggins, gardener to J. Beck, Esq., Isleworth, for ten Pelargoniums; to Mr. Terry, gardener to C. W. Fuller, Esq., Youngbury, Ware, Herts, for six Roses, in thirteen-inch pots.

Large Silver Medal.—To Mr. M. Clarke, gardener to C. Webb, Esq., Highgrounds, Hoddesdon, Herts, for six stove and greenhouse plants; to Mr. T. Williams, gardener to Miss Traill, Hay's Place, Kent, for eight Cape Heaths; to Mr. W. May, gardener to J. Spode, Esq., Staffordshire, for six Cape Heaths; to Mr. Whitbread, gardener to H. Colyer, Esq., for six greenhouse Azaleas; to Mr. G. H. Baring, nurseryman, Stratford, for six exotic Orchids; to Mr. Turner, Slough, for six fancy Pelargoniums; to Mr. Windsor, gardener to G. Cannon, Esq., Keddespore Hall, Hampstead, for six fancy Pelargoniums.

Silver Gilt Medal.—To Messrs. T. Jackson and Son, nurserymen, Kingston, Surrey, for twelve stove and greenhouse plants; to Mr. Glendinning, nurseryman, Chiswick, for twelve stove and greenhouse plants; to Mr. Carson, gardener to Mr. W. Farmer, Nonsuch Park, Cheam, Surrey, for ten stove and greenhouse plants; to Mr. H. Chilman, gardener to Mrs. Smith, Ashted House, Epsom, for six stove and

greenhouse plants; to Mr. Bun, gardener to Sir J. R. Scott, Hornsey, for six tall Caeti; to Mr. Rhodes, gardener to Mr. J. Philpott, for eight Cape Heaths; to Mr. Whitbread, gardener to Mr. H. Colyer, for six Cape Heaths; to Mr. Clark, nurseryman, Streatham, for six greenhouse Azaleas; to Mr. B. Peed, gardener to T. Tredwell, Esq., for eight greenhouse Azaleas; to Mr. J. Reid, gardener to C. T. Gabriel, Esq., for six greenhouse Azaleas; to Mr. Green, gardener to Sir E. Antrobus, Bart., for six exotie Orchids; to Mr. C. Turner, nurseryman, for six Cinerarias; to Messrs. Fraser, Lea Bridge Road, for twelve Pelargoniums; to Mr. J. Wier, gardener to J. Hodgson, Esq., the Elms, Hampstead, for ten Pelargoniums; to Messrs. Fraser, nurserymen, for six fancy Pelargoniums; to Mr. Bray, gardener to Baron Goldsmid, for six fancy Pelargoniums; to Messrs. Lane and Son, for a collection of Rhododendrons.—(*Morning Chronicle*.)

RAPID GROWTH OF MUSA ENSETE.

I TRUST I may be excused, by the readers of THE COTTAGE GARDENER, for presenting them with the following brief notice, of what must be considered the most extraordinary example of rapid vegetable growth, that ever has occurred in this, or, perhaps, any other country.

Musa Ensete, the subject of this notice, stands in the south wing of the Palm house, in the Royal Gardens, Kew; and is seen, and wondered at, by almost every one of the thousands who visit that establishment. Seeds of this superb *Musa* were first introduced about three years ago, from Abyssinia, and many plants were successfully raised from these seeds, shortly after their being received. They showed early signs of rapid growth and great beauty, and they received good encouragement to develop these qualities well.

One plant was selected from the rest to receive special pains, so that its parts might be developed in the highest possible degree. Its rapid growth, under the good treatment it received, soon brought the necessity of placing it in a tub, for the largest-sized pot became too small for the daily increasing scope which its roots required. About the middle of last summer it received its last shift, when it was placed in a tub five feet six inches square, and nearly five feet deep.

The dimensions of the plant, at the present time, are as follow:—Circumference of stem, six inches from the ground, six feet three inches; height from the surface of the tub, twenty-six feet; length of leaves, fifteen feet; breadth, three feet. The number of these immense leaves are at present fifteen, and they are still increasing.

It is thought that the plant will flower and perfect its fruit this summer, which will again present an opportunity of raising it in numbers, for farther distribution abroad.

In its native country, it is used by the natives something in the same way as we use Cabbages, the leaves and stem being, in a young state, considered very wholesome and nutritious food.—A KEW GARDENER.

BEDDING PLANTS.

IN answer to Mr. Beaton's inquiry respecting *Geranium Crimson King*, at page 5 of this volume of THE COTTAGE GARDENER, I must say, I do not think it will ever be of much good to us as a bedding plant. I had some of it planted out last season, but it did not bloom freely. Perhaps some one may say, that I planted it in a soil much too good for it; but I had *Ignescens superba* growing in the same soil and situation, and that did not run to foliage so much, but continued flowering as freely as I could wish, from the time it was put out till the frost cut it down.

I think *Ignescens superba* is the best hybrid bedding *Geranium* out; it is equally as valuable for early spring forcing in pots. It was sent out about the same time as *Gaillardia coronata nana*. I have tried this *Gaillardia* three seasons, as a bedding plant. It is a fine showy flower, and so is *Gaillardia semi-pleno*, but they are both rambling growers. I dare say any of our friends who have tried them, will be of the same opinion as myself, and that is, that they are not very fit for bedding, but are excellent border plants.

If Mr. Beaton has not seen *Geranium Ignescens superba*,

or has not got it, I should feel a pleasure in sending him half-a-dozen plants of it; so that he might be able to give a description of it in some future number. Also, half-a-dozen of *Jaquinta*, the best dark *Verbena* out. It is in the way of *Ariosto*, but a great deal darker, with a fine white eye, and a nice compact habit.—J. W. WILLS, Gardener to S. P. Kennard, Esq., Woodlands, Stanmore.

NEW AND RARE PLANTS.

CATTELEYA GRANULOSA (*Rough-lipped Cattleya*).

Discovered by Mr. Hartweg, about 1840, in Guatemala. "Well cultivated, there are certainly few Orchideous plants that can surpass it in beauty." Blooms in August; flowers yellowish green, variously spotted with crimson.—(*Botanical Magazine*, t. 5048.)

POLYGONATUM ROSEUM (*Rose-coloured Solomon's Seal*).

It is a native of Altaie Siberia, at the River Kurtseh, and of Chinese Songaria. It is common also in the Himalaya, at elevations of from 7,000 to 11,000 feet. Flowers pinkish. It is "very pretty" and hardy.—(*Ibid*, t. 5049.)

BOLBOPHYLLUM NEILGHERRENSE (*Neilgherry Bolbophyllum*).

Collected by Mr. McIvor, during 1849, in the Neilgherry Hills. It flowers in the warm Orchid house in January. Flowers brownish green, petals tipped with reddish purple.—(*Ibid*, t. 5050.)

CLIANTHUS DAMPIERI (*Dampier's Clianthus*).

This has been called *Clianthus Oxleyi*; *Donia speciosa*, and *Colutea Novæ-Hollandiæ*. This splendid greenhouse shrub blooms in March. "In point of size the flowers are quite equal to *Clianthus puniceus*, but in richness of colour far superior, the crimson of the petals being relieved by the velvety purple-black disc of the standard of the petals." It was discovered as long since as 1699, by Dampier, in Dampier's Archipelago, North-west Australia. It was introduced by Messrs. Veitch and Son, of the Exeter and Chelsea Nurseries.—(*Ibid*, t. 5051.)

FRITILLARIA GRECA (*Greek Fritillary*).

It is a native of Mount Hymettus. It is pretty and hardy, flowering in the open border during March. It has been called *F. tulipifolia*. Flowers tawny or reddish brown, spotted, but scarcely tessellated, with a green line down the centre, and round the edge of each sepal.—(*Ibid*, t. 5052.)

STRENGTHENING A WEAK STOCK BY ADDING A SWARM.

THE weakness of stocks at this season of the year is, in almost all cases, owing to the great age and want of fertility in the queens; a state of things, which is the inevitable result of the absurd and unprofitable practice prevalent amongst beekeepers, of destroying the two-year old stocks in the autumn, and keeping the swarms to breed from the following year.

I have now, in my own garden, a hive, which is tenanted by a colony having a queen of 1855; originally she was a most fertile mother; in 1856, she led off a swarm and established a colony, from whence a virgin swarm and two casts proceeded the same season. This extraordinary increase I fully described in THE COTTAGE GARDENER at the time. In 1857, she again migrated from the colony established by the virgin swarm of 1856, and was placed in the hive that is now her residence.

My object being to test her degree of fertility, I did not add another swarm to the hive, although the swarm was not a large one.

The hive is now weak, although the queen is still breeding slowly, and the bees are carrying in pollen; but, if left to itself, the stock will evidently prove an unprofitable one. I shall, therefore, add to it an early swarm, which, I believe, will be attended with the best results. My method of proceeding will be to wait until a swarm comes off, and hive it temporarily in a common straw hive. In all probability, I shall take away the old decrepid queen from the stock, but as such a proceeding is not absolutely necessary, I will not describe it, but merely state that the swarm may be added to the stock

with the greatest ease, by striking the hive a sharp blow with the hand, when the bees will be loosened and fall in a heap on the ground; the hive containing the stock may then be placed over them, resting on a stone, or stiek, previously laid on the ground to wedge up the side, and give the bees entrance; the two families will coalesce, work vigorously, and a large honey harvest will probably result.

With storifying hives, such as my own Bar and Slide, or the Stewarton, the proceeding is much easier; the swarm is hived in a single box; this is placed over the weak stock to be strengthened, and by pulling out the slides the communication is at once made. A single puff of smoke ensuring the pacific union of the families.

My object in writing this letter, is to suggest to those bee-keepers, who have weak stocks, the great advantage of adding a swarm to them, instead of following the usual practice of destroying the stock, or allowing it to die out, and obtaining the few pounds of honey it contains.

When a swarm is put into a hive containing comb and a few pounds of honey, the bees composing it go to work with great vigour, and the queen has a supply of cells to lay in; the result is, that the honey, not having to be consumed by the bees in the secretion of wax, is accumulated; and if the hive is a storifying one, a super placed above, when the bees are well at work, and room is wanted, is often filled with twenty to thirty pounds of virgin honey, still leaving enough in the stock hive below to supply the winter demand.

The bee-keeper must exercise his judgment in proportioning the size of the super to the strength and activity of the stock, and the productiveness of the season and district.

Of course, this method of strengthening a stock cannot be advantageously used with the common straw skeps, or bell-shaped hives, as there is no means of giving room for the formation of virgin comb; the hive must be one capable of being supered. Another point, also, must be particularly noticed, namely, that the stock to which the swarm is added is in a wholesome condition, free from the eggs, or grubs, of the wax moth, and not in a mouldy state, or containing numerous dead young bees in the cells.—W. B. TEGETMEIER, *Muswell Hill*.

CLAYTONIA PERFOLIATA FOUND WILD IN ENGLAND.

LAST year I forwarded you a specimen of a plant from a hedge-bank in this neighbourhood. You thought it a foreigner, *Claytonia perfoliata*, and desired another blooming specimen next spring. This specimen is now enclosed; the plant grows quite freely in its old place; some patches appearing too large for this year's production. We are going to raise some of the seeds in heat, they being now ripe in the lower vessels, while the flowers are thick above. The question is, what is the name of the plant?—E. A. COPLAND, *Bellefield, Chelmsford*.

[This is, certainly, *Claytonia perfoliata*, and is such a remarkable plant, that when once well known, one can never mistake it for anything else. Like nearly all other annuals, its finest plants are always produced from self-sown seeds, that progress in their own natural way. It has, hitherto, been considered a native of North America, and a good portrait of it is in the "Botanical Magazine," t. 1336. *Claytonia alsinoides* is also a new plant in our English Flora, being discovered by Sir Joseph Paxton, in a plantation near Chatsworth Park. He was perfectly satisfied as to its not being likely to be the out-cast from the garden. If *Claytonia perfoliata* is to be found wild, where our correspondent describes, this may form another addition to our English Flora.]

DEATH OF MR. GEORGE McEWEEN.—This event, we much regret to record, took place on the 10th instant. Consumption completed its slow work on that day. His age was only thirty-eight years. He was buried at Arundel, where he had long served the Duke of Norfolk's father, and had reaped no small fame for his success in fruit culture. From Arundel Castle he passed to be gardener to E. W. Beaumont, Esq., at Bretton Hall; and, lastly, to be manager of the Horticultural Society's Chiswick Garden. Whilst gardener to Mr. Beaumont, he published, in 1856, his practical little work, "The Culture and Forcing of the Strawberry." He was in office at

Chiswick little more than twelve months, having entered upon the management of the Garden in February of last year. In that short time he made many important changes and improvements, and we hope the Committee will select, as his successor, a man equally skilled, and equally superior to undue influence.

HARDY PLANTS BLOOMING OUT OF DOORS, IN APRIL, IN THE ROYAL GARDENS, KEW.

RANUNCULACEÆ.—*Ranunculus millefoliatus*, *R. gramineus*, *R. amplexicaulis*; *Anemone apennina*, *A. hortensis*, *A. Pulsatilla*, *A. nemorosa*, *A. nemorosa-pleno*; *Adonis vernalis*.

PAPAVERACEÆ.—*Sanguinaria Canadensis*, *S. Canadensis grandiflora*; *Stylophorum diphyllum*; *Chelidonium quercifolium*, *C. majus*, *C. majus pleno*.

FUMARIACEÆ.—*Dielytra spectabilis*, *D. formosa*, *D. Canadensis*, *D. eximia*; *Corydalis nobilis*, *C. tuberosa*, *C. tuberosa albida*.

CRUCIFERÆ.—*Aubrietia erubescens*; *Iberis saxatilis*; *Alyssum saxatile*, *A. saxatile Gemonense*; *Schivereckia podolia*; *Draba hirta*.

LEGUMINOSÆ.—*Coronilla Emerus*; *Wistaria sinensis*; *Orobus tuberosus*.

MAGNOLIACEÆ.—*Magnolia conspieua*, *M. purpurca*; *Illicium eligiosum*.

ERICACEÆ.—*Arbutus Andrachne*, *A. procerus*; *Arethophylos pungens*.

HYDROPHYLLACEÆ.—*Nemophila atomaria*, *N. insignis*.

COMPOSITEÆ.—*Doronicum Caucasicum*, *D. Austriacum*, *D. macrophyllum*; *Hologymne glabrata*.

BORAGINACEÆ.—*Anchusa sempervirens*; *Symphytum Caucasicum*; *Pulmonaria mollis*.

PHILADELPHACEÆ.—*Deutzia graevis*.

GROSSULARIACEÆ.—*Ribes aureum*, *R. parviflorum*.

ROSACEÆ.—*Waldsteinia trifoliata*, *W. geoides*; *Rubus spectabilis*.

POMACEÆ.—*Pyrus spectabilis*; *Amelanchier botryapium*.

DRUPACEÆ.—*Amygdalus nanus*, *A. nana alba*.

LILIACEÆ.—*Fritillaria imperialis*, *F. imperialis lutea*, *F. latifolia*, *F. Persica*; *Tulipa sylvestris*, *T. Garnerianus*.

ASPHODELEÆ.—*Scilla amœna*; *Musearia mosehata*; *Ornithogalum nutans*, *O. Byzantium*, *O. fimbriatum*.

AMARYLLIDEEÆ.—*Leucojum æstivum*, *L. pulchellum*; *Narcissus aurantiacus*, *N. bicolor*, *N. polyanthus*, *N. galanthifolius*, *N. poeticus*, *N. poeticus angustifolius*, *N. papyraceus*; *Queltia odora*, *Q. foetida*.

MELANTHACEÆ.—*Uvularia puberula*.

PARAGRAPHS FROM MY POCKET-BOOK.

THE CRYSTAL PALACE.—A spot, invested with so much interest as the Crystal Palace, ought to yield (as it has indeed done) much to inspire the pen of those who seek and find a genuine source of pleasure, in propagating a taste from the "true and beautiful" in every department of science and art, as the occasional notices in your columns, from the diligent pen of a ready writer, upon the horti or flori-cultural features of this place evince, and by the awakening of a pretty general interest respecting them, which is not, we think, misplaced. For step by step, it seems, the gardens of the Crystal Palace have acquired a name and standing in the horticultural world that has seldom been enjoyed by any others so near the metropolis; and, indeed, a better authority than your unworthy correspondent has stated, in reference to them, "we have no better examples of flower gardening in this country;" and this sentence alone attaches to them an importance which we have no intention of lessening. Very little, indeed, is left, in connection with these grounds, that has not already been fully dwelt upon in previous notices. One subject alone, we believe, remains unmentioned; for, on reference to that repository of facts and scraps, that commonly occupies an otherwise empty pocket, we find a few notes that we shall make no apology for intruding. These apply chiefly to certain plants which, we conceive, deserve to be brought into more general service, as permanent edging plants.

The first of these is *Gentiana acaulis*; indigenous, easy of growth, and perfectly hardy, it combines with beauty of flower a constant verdure of foliage, at all times and seasons; and for ancestral honours of culture, can probably date to an earlier day than that of the Saxons. Possessing such peculiar recommendations, therefore, it is our opinion, that with its close, compact growth, it well deserves, in other gardens, the privilege it enjoys at the Palace, where it forms an excellent edging round the line of dwarf evergreen beds, that imitate in outline the shadow of the scroll, or ornamental work, on the north wing of the building.

In close proximity to this plant, is another which, although like the preceding one, is frequently found in knolls and elumps about the American garden, or pleasure ground, is not so often employed as we could desire in the manner it is here—that is, as an edging plant. We hardly know of a prettier plant, for a permanent edging, than the hardy and elegant little *Erica herbacea*, particularly when employed, as at this place, around beds of *Kalmias*, *Rhododendrons*, &c., which, when set off by this neat-foliaged, free-flowering, little plant, possesses a greater finish, and more natural appearance to our eye, than any could possibly have without it. Introduced from the south of Europe a long time back, it takes its stand among the best and hardiest edging plants we possess, nor does it differ from the native varieties in facility of cultivation, whilst it far surpasses most of them in elegance of flower and aptitude of growth for an edging.

The next, and to our taste the very best of permanent edging plants, is the bright-berried *Gaultheria procumbens*. This plant has no beauty of flower to recommend it, but its clustering bunches of ruby fruit within an inch of the ground, form a far more smiling and attractive feature (and withal more appropriate) than the gaudiest floral display could effect, if placed in the same situation. Not that we are averse to bright and showy flowers as edging plants, but these are not to be had at all seasons, whereas this trim and compact plant presents an almost unfailing supply of berries summer and winter, without reference to heat or cold, Leo, Pisees, or any other sign of the Zodiac. It is employed here as edging for dwarf *Rhododendron* beds, and a more suitable plant for the purpose it would be a matter of some difficulty to meet with, as any person may convince himself, who will inspect the plants around the circular beds on the right and left of the great centre fountain. This plant concludes our notes upon permanent edgings at this place; other durable edging plants, indeed, are plentiful, and, we may add, too well known to warrant mentioning here.

The last alluded to, however, is our favourite; there is nothing in it at all showy, but it is to us, among plants, what White, of Selbourne, is among writers—as beautiful in its retired, unostentatious display, as White is by that engaging charm of quiet and refined taste which encircles and perpetuates his writings.—J. H. C., *Hamilton Place, Sydenham*.

CULTURE OF CELERY.

Good well-blanchéd, crisp Celery is at all times acceptable at the table of all classes, there being but few to whom it is not a favourite; therefore, to have it good, and as early and late as possible, is one of the points in good gardening to which much attention has been paid, and, in many cases, it has been made serviceable a much longer portion of the year than most other vegetables. At the same time, there are some difficulties in the way of its being obtained early in every place, to which it is advisable to call attention, as the situation which produces early Peas, Cauliflowers, and Potatoes, is not always the one that produces early Celery, for reasons which it is proper to consider, in order to arrive at a just conclusion on the matter.

It is generally admitted, that the Celery of our gardens is an improved variety of a wild plant found in wet ditches, and other marshy places, where it grows, seeds, and reproduces itself in the usual way; and it is generally found in most vigour when near the sea coast, or tidal river—salt, in some shape, being beneficial to it. Now, growing in such stagnant places, it can hardly be wondered at if the progress of the cultivated plant in dry, hot, garden soils in the summer months be slow and unsatisfactory; for, unless the latter be

repeatedly saturated with moisture, it will become stunted, cease growing, and, very probably, run to seed. This is often the reason why Celery is obtained earlier in moist situations than in dry well-favoured ones. A cool bottom being a more fitting element for it than a dry, warm one, on this matter hangs the whole secret of Celery growing; and those who have not the means of supplying their plants with abundance of water, at the time they want it, cannot well succeed in the culture of this half-aquatic plant, unless a more natural agent lend its aid; that is, a wet season. When this is the case, Celery may, of course, be grown earlier at the more forward place, than at the cool, moist one. But it more often happens that the months of July, August, and September, are more dry in dry places than the other months: hence the necessity of using artificial means, as copious waterings, &c.

In very large gardens there is often a diversity of soil, which can be appropriated to the various purposes wanted, and it is sometimes arranged, when the principal garden is of necessity of an extreme kind of soil, to have a piece somewhere else, of an opposite kind. If the latter be a mile away, it had better not be rejected, as its utility will be found unquestionable, even in the article Celery. Although it thrives best on moist ground, it does not keep so well there as on drier. The crop, therefore, that is intended for the latest use, ought to be planted on this dry situation, as being more favourable to its preservation; while the early and principal crop might have one more suited to its growth, in the early autumn months. Other considerations, of course, as the nature of the season, and latitude of the place, being duly attended to at the time.

The seed of Celery is one of the most sluggish in vegetating, but it is one of the hardiest. To have well-blanchéd plants early in the summer, some cultivators sow a little seed in a hotbed in the autumn, and prick them out in boxes, or pans, to plant out in April, when the ground is ready to receive them. But there is much uncertainty in this plan—the plants being so apt to run to seed—that it is advisable not to sow until the beginning of January, and by hastening the plants on through the early stages of their growth, and not being in too great a hurry to plant out, the produce is often quite as early. Care must especially be taken to gradually harden the plants, so as to inure them to the cool ground before they be finally committed to it.

As a garden crop, Celery is a gross feeder, and drinks in liquid manure like a toper. This, however, need not be given in too large quantities, or the solidity of the Celery may be defective. Manure in the trenches ought also to be well rotted; and in very dry weather some covering will be necessary to prevent the ingress of sunshine, as well as the undue evaporation from the surface, or its hardening by repeated watering. Decayed or decaying leaves are as good as anything for this, or it may be dung in some shape.

Of the varieties of Celery, it is needless here to remark. A good solid white kind is most esteemed; but towards the end of the season, a good red kind will be found to keep better. There is also an intermediate variety; and many eminent growers have appended their names to seeds in the first case sent out by them, which are superseded by others in turn. It is, therefore, useless giving any precise directions as to kinds, as many growers save a little seed themselves of favourite kinds, which is sown and grown as “my own kind,” not from any exclusive notions of denying it to others, but as a distinction from the other high-sounding names the seed-lists contain.

Seed sown out of doors on some raised bed, with the least possible amount of heat, and, in many cases, without any use of glass, will come in early enough, if the seed be sown at the beginning of March. Of course, in late and unfavourable situations, a little more assistance may be given it. One thing, however, is necessary to impress on the amateur cultivator, that is, to prick out the young plants as soon as they can be handled; for if they be allowed to stand thick on the bed, they become so weak and flimsy as to handle afterwards with difficulty, and lose a considerable time in recovering themselves. A piece of ground exposed to the full sun ought to be selected for pricking them out; and the soil, being enriched by manure, need not be deep, and the plants put in, three or four inches apart, in dull, showery weather, and shaded for a few days, if required, soon grow apace; being watered, of course, when wanted, which, in the dry, hot weather about Midsummer, will be pretty often.—J. ROBSON.

TO CORRESPONDENTS.

ROSE-BUD GRUB (*T. S.*).—There is no "cure" for this. Every bud attacked should be destroyed with the grub which is devouring it. This prevents its becoming a moth, and producing grubs to annoy next year.

VISITING GARDENS (*A Lover of the Profession*).—It is rather too much to ask of our staff, to give up more of their time by attending visitors to the gardens under their charge. Those who wish to see good gardening, can do so by visiting the gardens of the Crystal Palace, Kew, and Hampton Court; besides those of the many private gardens obligingly shown in every county.

ROSES AT THE HORTICULTURAL SOCIETY'S SHOW.—"In your report of the Horticultural Society's Show, April 21st and 22nd, you say—'Next, a collection of Roses, in No. 8-pots, from Mr. Francis, took the first prize, and Messrs. Lane and Son the second prize, for the next best group of Roses.' This is a mistake, as we were awarded an equal first prize with Mr. Francis, for twelve Roses, in No. 8-pots; also, first prize for six Roses, and the only prize for twelve *Moss* Roses. You also say—'A collection of Roses, on Manetti stocks, from Mr. Francis, and another from Messrs. Lane and Son.' Now these latter were not on Manetti stocks. If you will kindly correct these errors, you will much oblige—H. LANE AND SON."

FERNERY (*H. M., Herts*).—You may construct it at any time, as the Ferns are in pots, and can be turned out without disturbing their roots.

FRUIT-TREE BRANCHES DYING (*H. H.*).—This is a common occurrence, both to Gooseberry and Apricot trees, but the cause has not been detected.

NAMES OF PLANTS (*H. L. E.*).—The yellow flower is *Cassia capensis*; the blue flower is *Hovea Celsi*; the bottle-brush flower is *Veronica Hendersonii*. (*Flora*).—Yours is *Polygala myrtifolia*. It is a hardy greenhouse shrub; roots readily in a hotbed from cuttings of the young shoots at this season.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

MAY 26th, 27th, and 28th. BIRMINGHAM (SUMMER). *Secs.*, Messrs. Titterton and Cattell, 26, Worcester Street. Entries close May 10th.

JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. *Sec.*, Mr. John Kingsbury, Hammet Street, Taunton.

JUNE 9th and 10th. BEVERLEY AND EAST RIDING OF YORKSHIRE. *Sec.*, W. W. Boulton, Beverley, Yorkshire. Entries close on the 1st of June.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. *Sec.*, Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. *Sec.*, Mr. James Beesley.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. *Sec.*, W. Houghton.

AUGUST 18th. AIREDALE. *Hon. Secs.*, J. Wilkinson and T. Booth, Shipley.

AUGUST 30th and 31st, and SEPTEMBER 1st. NORTH HANTS. *Sec.*, Mr. T. Moore, Fareham, Hants.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.

CHARACTERISTICS OF SILVER-SPANGLED HAMBURGHS.

RECRIMINATION having been the order of the day of late, would it not be better to change the subject, and instead of finding fault with each other's birds, &c., explain the points which the different breeds of poultry ought to possess. I, for one, think it would, and if you, Mr. Editor, think the under-mentioned article on the points of the Silver-spangled Hamburgh worthy of insertion, shall be glad, at some future time, to give the points of the other varieties of Hamburgs. Being a breeder, and an exhibitor of some experience in these sorts, I think my remarks may be considered the opinion of the great majority of Yorkshire fanciers.

The Silver-spangled Hamburgh—to be perfect, should possess the following points, viz. :—

THE COCK.—The neck and saddle hackle should be a clear white; breast boldly and evenly spangled; the wings should have two well-defined bold bars, free from lacing on the edges; the tail should be clear white ground, spangled with black; thighs well spangled; the comb should be of good size, but not clumsy, firmly and evenly set on the head, well filled with points and spiked behind, the spike to be perfectly straight with the comb, and not drooping; the ear-lobes should be large and white; legs, blue. His weight should be from 4½ lbs. to 5½ lbs.

THE HEN.—The neck feathers must be a clear white tipped with black; the wings must be well spangled with

large round spots, the larger the better, and there must be on the wings two distinct bold bars; the saddle, or back, must also be well and evenly spangled, and also the thighs; the tail clear white ground, tipped with black; the comb well and evenly set on the head, well filled with points and spiked behind; ear-lobes, white; legs, blue.

As the Silver-spangled Hamburgh is a bird noted for feather, a deficiency in this respect no other good points can compensate for.—HAMBURGH.

BEVERLEY AND EAST RIDING OF YORKSHIRE POULTRY ASSOCIATION.

(From a Correspondent.)

THIS Association will hold its first annual exhibition in the Norwood Rooms, Beverley (a light, airy, and very suitable building), on Wednesday and Thursday, the 9th and 10th of June. Entries close on the 1st of June. Every provision for the comfort and wellbeing of the stock, and the satisfaction of exhibitors, has been made; well-known and universally-respected Judges have been appointed; experienced *feeders* and *handlers* have been selected; and the pens are as perfect as money and experience can make them. Besides a liberal scale of money-prizes in all the ordinary classes of poultry, pigeons, and rabbits, a Sweepstakes will be opened for Single Game Cocks, entrance 5s., five per cent. only being deducted from the entries towards the funds of the Society; the rest being divided, in fair proportion, between the *four* best birds. A special class for Single Dorking Cocks will compete for silver plate, value £5. Entrance 5s. The selection of the plate to be left to the choice of the successful competitor. We hope that this class will be well filled, and that many well-known breeders of this truly valuable fowl will, by their presence in the lists, sanction and back up what we believe to be a move in the right direction, viz., encouragement to the breeders of the most useful of our fowls. Valuable prizes have, from time to time, been offered for the Game fowl, truly the most symmetrical and elegant of its race, but, without depreciating its merits, we think that utility should be encouraged as well as symmetry; and, therefore, a special class for Dorkings has been opened, for the first time, we believe, to compete for plate of considerable value. A silver medal will be awarded, *in addition* to the first prize, for the best pen of Black-breasted Red Game fowls exhibited; and a silver medal, value £2, will be awarded to the *three* best pens of fancy Pigeons, to be entered specially for this medal at the rate of 2s. for each lot of three pens.

MR. W. C. WORRALL.

IN your number of April 27, you stated, that my assertion, that I was asked to endeavour to induce the Rev. R. Pulline and Mr. Baily, to officiate as Judges at Preston, was "all totally untrue." I must, therefore, in order to clear myself from this charge of falsehood, beg you to reconsider the evidence on which you have founded your assertion.

You had "before" you a letter from Mr. Oakey, the Secretary, dated December 23rd, offering Mr. Hewitt the Judgeship, "with the unanimous wish of the Committee." Now, Sir, you must be aware that, according to the regulations of the Preston Show, exhibitors were requested to endorse their certificates of entry with the names of the gentlemen they wished to be appointed, thereby placing the election of Judges in the hands of the exhibitors, whose wishes could not be ascertained before the close of the entry on the 18th of January. Surely, the Preston Committee can explain this inconsistency, and show that they kept good faith with their supporters.

I have unlooked-for evidence in support of my statement, as Mr. Musgrove, of the Liverpool Committee, assures me that he was present, and heard Mr. Tate asking my influence with both the Liverpool Judges.—WILL. C. WORRALL.

[Mr. Worrall claims space for the above, but whilst we grant it, we must remark that he has not quoted truly what we *did* say on the 27th of April. We said that it was all untrue that Mr. Hewitt's appointment was "as a last resource," and we had Mr. Oakey's letter before us to show that such a statement was untrue. Whether the Preston Committee

'kept good faith with their supporters' is another question, and has nothing to do with Mr. Worrall's statement, that Mr. Hewitt's appointment was "as a last resource." We now finally close this ill-commenced and ill-conducted wrangle.—
ED.]

PIGEONS.

(Continued from page 94.)

THE first division contains the Ring Dove, the Stock Dove, and the Turtle Dove; to which I have added a description of the Collard Turtle, which, although not a native of England, yet is commonly kept in cages, and belongs to this tribe.

The second division comprises the Blue Rock Pigeon, and the Chequered Dovehouse Pigeon. These are both found in this country in a state of nature, though, unlike the first, they do not inhabit trees, but frequent cliffs, rocks, or ruins.

The third division includes all those fancy kinds which have any distinct or peculiar property, which at once separates them from all other sorts; and as some of these have received a considerable amount of culture, and have long been held in high estimation by fanciers, these four are permitted to enjoy the seats of honour as high fancy birds—they are the English Carrier, the Almond Tumbler, the English Powter, and the Runts. This precedence is, however, only one of courtesy, as all the others in this division have an equal right to notice; for the Carrier is only one sub-variety of the Wattled Pigeons; the Almond but one variety of the Tumblers, and the English Powter of the Croppers. Of the Runts, there are also many varieties. To this division also belong the Fantails, the Jacobins, the Trumpeters, and Laughers, the Turbits, and Owls; the Finnikin, Turner, and Smiter; and those with peculiar feathers, as the Frillback, the Friesland Runt, and the Silky, or Lace Pigeon; also the Swallow-tailed Pigeon, described by Dr. Bechstein; perhaps the Carmelite, and the crested Pigeon, if such a breed does exist.

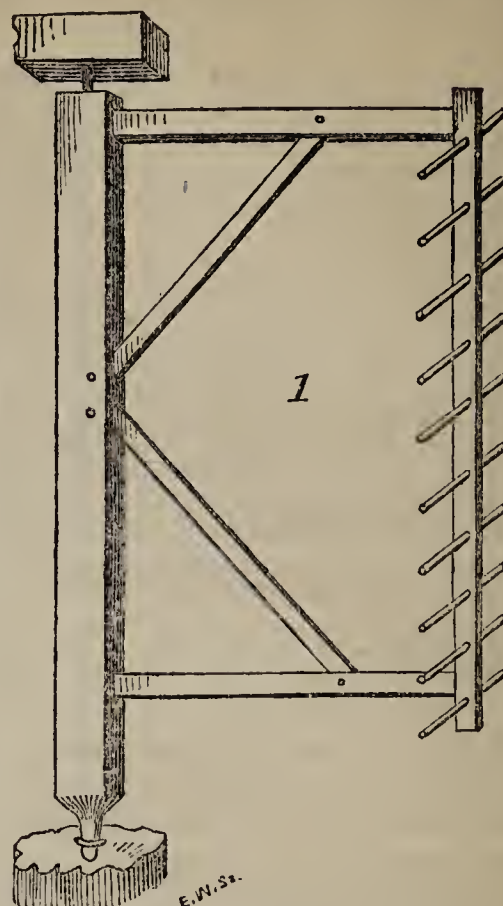
The fourth division comprises the Toys, or second-class fancy Pigeons. These have but one property, namely, feather; they are decidedly of composite origin, or Dovehouse descent, and if they lose their only property, are of no more value than the common mixtures, or mongrels, everywhere too abundant. Of these I have enumerated about twenty varieties, such as the Suabian Spangled, the Porcelain, or Hyacinth; the Nun; the Priests, Monks, and Capuchins; the Archangel, and White ditto; the Spot and White Spot; the Swiss; the Starling, Stork, Swallow, Martin, Gull, and Magpie; the Breastplate, Helmet, and Shield, and the Lee Pigeon.

By referring to this form of classification, Committees of Shows, or other exhibitions, can at once draw up their lists of such as they deem necessary; or, by selecting such of the fancy Pigeons as they think worthy of special prizes, they might place the remainder in an extra class with the Toys; but I do not think any of these last should be placed on an equality with those in the third division, much less before them, which is now sometimes the case.

THE PIGEON HOUSE.

Various are the buildings and accommodations appropriated for the breeding of Pigeons. Of some of the more general abodes, I will endeavour to give a short description. The first I will notice is the dovecot. This is usually a stone or brick erection; the most approved form is that of a circular tower, either detached, or placed upon some other outbuilding. The size varies considerably, according to the number of Pigeons intended to be kept. The floor should be of stone, slate, or paving tiles, and well secured, to prevent the entrance of rats, mice, or other enemies of the Pigeons. On the south side of the dovecot there should be a window to admit light, and a door opposite by which it may be entered. The nests are arranged all round the sides, holes being left in the masonry about nine inches, or one cubic foot in size, and furnished with a ledge projecting outwards, to serve as a resting place for the birds, and also to keep the nest and eggs from falling out. In the centre is fixed a swinging ladder, by which access is obtained to all the nest holes; below, it is inserted in a stone, and above, in the middle of the beam that crosses the dovecot, so that it may be turned round to any side of the building. A reference to the accompanying cut will best describe its construction: the roof, either of slate or tiles, is made steep, to

prevent cats or rats ascending its outside, and the eaves must be well secured on the same score of safety to the inhabitants.



The entrance to the dovecot is from the top, or apex of the roof, a sort of shade, or dome, called the lantern, from its bearing some resemblance to a large lantern with the glass out; the roof of it overhanging to keep out the rain: this is where the Pigeons go in and out. Inside the top of this cover is suspended, by a cord over a pulley, a latticed frame, which fits the opening, and can be let down at pleasure, to shut in the birds when necessary.

The usual occupants of our dovecots are the Chequered Dovehouse Pigeons: these feed daily with the poultry in the yard, and pick up a great portion of their living in the fields, which consist of scattered grain and innumerable seeds of weeds. In first establishing a dovecot, care must be taken to shut the Pigeons in for a time, that they may become accustomed to it, and they should be so confined that they may see out on the surrounding locality; this is best done by enclosing the lantern in a framework covered with a net, that the birds may know the way in and out. During their confinement they must be supplied with food and water in the dovecot, and also for some short time after they are allowed their liberty. The number of Pigeons kept must depend on the accommodation for them, and they must never be allowed to exceed the number of nests: two nests are absolutely necessary for each pair of Pigeons. This is a rule that ought never to be forgotten; far better to allow three or four nests to each pair than a less number; this becomes at once evident when it is remembered, that the hen Pigeon generally goes to nest again ere the former young ones can fly. During the breeding season, the young birds may be taken from the nests as wanted, once a week or fortnight, according as they become ready. The dovecot should have a thorough cleaning, at least once a year; the best time is late in autumn, or early winter, when the occupants are not breeding: all the nests should then be well scraped out, and the whole cot well limewashed; a little sulphur added to the wash would, I should think, help to destroy the tiny vermin which often infest such places, and I think it would not injure the birds. I have found lime would not destroy the mites in fowl houses, or on fowls, but powdered sulphur banishes them completely; and, although I have had no opportunity of trying it on a large scale among Pigeons, I do not doubt it would be found a most useful adjunct.—
B. P. BRENT. (To be continued.)

OUR LETTER BOX.

WASHING FOWLS—FEEDING DUCKLINGS (A Nottingham Subscriber).—Any white-feathered fowls may be washed with soap and water, wiped off with a flannel. The birds should be put in a basket with clean straw, and placed before a fire till dry. Barleymeal is good food for young ducks, with any scraps chopped up or mashed: it should be put in shallow water. They should not go in the water the first fortnight.

WEEKLY CALENDAR.

Day of Mth	Day of Week.	MAY 25—31, 1858.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
25	TU	WHIT TUESDAY.	29.492—29.384	69—40	E.	.05	57 af 3	56 af 7	22 af 2	12	3 24	145	
26	W	EMBER WEEK.	29.629—29.520	70—38	S.	—	56 3	57 7	38 2	13	3 18	146	
27	TH	Jacksonia grandiflora.	29.780—29.646	73—36	S.W.	—	55 3	59 7	rises	☺	3 12	147	
28	F	Kennedya prostrata.	29.835—29.573	74—50	E.	—	54 3	0 8	41 9	15	3 5	148	
29	S	KING CHARLES II. REST., 1660.	29.984—29.881	66—49	N.E.	—	53 3	1 8	34 10	16	2 58	149	
30	SUN	TRINITY SUNDAY.	30.027—29.985	63—39	N.E.	.01	52 3	2 8	13 11	17	2 50	150	
31	M	Marryatta nigricans.	30.062—30.023	68—32	E.	—	51 3	3 8	43 11	18	2 42	151	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 67.1° and 46.3°, respectively. The greatest heat, 91°, occurred on the 28th, in 1847; and the lowest cold, 29°, on the 25th, in 1839. During the period 126 days were fine, and on 91 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE stumps of *Broccoli* to be cleared away, and the ground dug.

BROAD BEANS.—Top them as soon as the pods begin to form at the lower part of the stem. After a shower of rain, earth-up the successional crops.

BRUSSELS SPROUTS.—Prick out the early sowing, to strengthen them before they are finally planted out.

CARROTS.—Sow the *Early Horn*, to draw young during the summer.

CAULIFLOWER.—If very large heads of the early crop are required, manure water to be given liberally; but if only moderate size is preferred, the manure water may be dispensed with. Sow seed, to come into use in October and November.

CUCUMBERS, under handglasses, to be pegged down, as they advance in growth. When they require it, to be watered in the morning of a fine day. Sow seed for succession, and for Gherkins.

ONIONS.—Thin, leaving the strongest from four to five inches apart. Plant the thinnings, if wanted; they succeed well when transplanted in showery weather.

PARSLEY.—Sow, and thin out the plants of the early sowing, six inches apart.

PEAS.—Sow. If dry weather, water the open drills when the seed is sown, to retain the moisture; and, as soon as the early crops begin to pod, a liberal supply of water will forward and increase the produce.

POTATOES appearing above ground, to be earthed-up, to protect them from frost, if it should occur.

RADISHES.—Sow, and water freely in dry weather.

SAVOYS and SCOTCH-KALE.—Prick out some of the earliest sowing, and shade for a few days, until the plants have taken fresh roothold.

SCARLET RUNNERS.—Sow the main crop.

SEA-KALE.—Remove the pots, or covering, as soon as done with, and dig between the rows.

SPINACH.—Thin the early crops.

TOMATOES.—Plant out under a south wall, or fence.

FRUIT GARDEN.

FRUIT TREES.—Divest them gradually of their superfluous shoots, and ply the engine, or syringe, to destroy insects, and to cleanse the fruit and trees of dead flowers, cobwebs, &c.

STRAWBERRIES.—Water freely, if growing in a dry situation.

FLOWER GARDEN.

ANNUALS.—Thin out, leaving in each patch in the borders, from three to six plants, according to the natural habit of each plant.

BEDDING-OUT PLANTS.—Begin with *Calceolarias*, *Verbenas*, *scarlet Geraniums*, &c., leaving *Heliotropes*, *Dahlias*, *Anagallis*, and such things as are very susceptible of injury from frosts, until the latter part of the month. A few branches, stuck in the beds, will be of service in protecting them from the drying effects of

bright sunshine, and will frequently ward off a degree of frost that, to unprotected plants, would be destructive. For the mixed system, the *Flower of the Day Geranium*, with the old *Verbena venosa*, is recommended; the *variegated Mint*, with *Emma*, or any other such *blue Verbena*; the *blue Lobelia* resting on the foliage of the *pink Ivy-leaved Geranium*. The object is foliage, with strong, and, as far as possible, complimentary contrasts of colour.

CARNATIONS and PICOTEEs to be staked, tying up the shoots regularly as they spindle.

CHRYSANTHEMUMS.—Put in cuttings, in light soil, under a handglass; to be shaded.

CINERARIAS going out of bloom, to be placed in a cold frame for suckers.

HERBACEOUS PLANTS, such as *Phloxes*, &c., thin the shoots; each shoot to be properly staked, instead of being bundled together, and tied to one stake.

PINKS.—Continue to remove exuberant shoots, and thin the buds, removing any that are small, or malformed. If insects appear, brush them off, in preference to bruising them on the buds, or stems.

TREES and SHRUBS, recently transplanted, to be watered occasionally at the roots, and over-head with the engine, or syringe, on the evenings of bright days.

WILLIAM KEANE.

THE ORIGIN OF GUANO.

It has always been our opinion, from many considerations, that guano is not principally formed from the excrements of sea fowls; and we have that suspicion strengthened by the communication with which we shall close these notes.

We have never felt satisfied, that birds would congregate in such countless multitudes as to form these accumulations of guano; and we always raised the inquiry—Why do the birds flock there? Certainly, not merely for the purpose of depositing their excrements!

Then, we also observed, that the analyses of guano, and its very appearance, agree better with the supposition that it is the remains of decayed fat and flesh, than of the same organic products after being digested.

The following is the analysis of some guano from the Chincha Islands, presently to be mentioned:—

Water	8.5
Sulphate of potash	6.0
Muriate of ammonia	3.0
Phosphate of ammonia	14.2
Sesqui-carbonate of ammonia	1.0
Sulphate of ammonia	2.0
Oxalate of ammonia	3.3
Organic matter	18.5
Silica	1.2
Urate of ammonia	14.8
Oxalate of lime	1.0
Subphosphate of lime	22.0
Phosphate of magnesia and ammonia	4.5

100.0

We have only further to observe, that Captain Bulford is a person perfectly trustworthy, and is well known to us.

"Guano, or Huano, is composed of the decomposed bodies of seals, aquatic birds, and their deposits. The birds are penguins, pelicans, Solan geese, and a small bird resembling the divers seen in our channels. There are other kinds, but those I have mentioned are the most numerous. Perhaps, were I to describe the present state and appearance of one of the islands, that, as yet, is undisturbed, it may better convey an idea how guano has been formed, than anything else I could write.

"The Chincha Islands are three in number, extending about seven miles in a north and south direction, about twelve miles to the west of the town of Pisco, on the coast of Peru, and about 120 miles to the south of Lima. The north and middle islands are those from which all Peruvian guano has been, and is yet being taken. The south island is untouched, and remains in its natural state. I landed several times on this island, for the purpose of getting bird's eggs. It is about three miles in circumference, and the middle and highest part is about seventy feet above the level of the sea, with a deposit of guano of twenty-five feet at its greatest depth. Like the other two islands, there is no vegetation of any kind on it; and, from the innumerable bird holes in the guano, it has the appearance of a rabbit warren. These holes run about a foot or two feet from the surface, in every possible direction, and, as they are from five to ten feet long, frequently running into each other, the guano for two or three feet from the surface is perforated like a honeycomb. In each of these holes are birds like divers sitting on their eggs; and, in turning up the guano to get at the eggs, we often turned up dead birds, old ones, that had, doubtlessly, crawled into these holes to die, and would in all probability, if we had not disturbed them, added, in the course of ages, to the stock of guano.

"I believe it is well known to naturalists, that seals generally congregate to one place in common, to die; and observation on this island goes to establish that fact, for although thousands of seals are seen on it, in every stage of decomposition, none are seen on the main land. The general opinion is, that the seals, when ill, have crawled up as high on the island as they could. The guano being soft, from the innumerable perforations, they soon work a bed for themselves, which may account for their being found generally half buried, and prevented from decomposing as fast as they would on rocks, sand, or any other substance; for guano is well known to preserve dead bodies from putrefaction. I have seen many dead seals on the south island, in a dried state, like mummies; the skeletons of others, that a kick would send into dust; and parts of skeletons, fins, &c., bodies of pelicans and other birds in the same state; which, in my opinion, all goes to prove that guano is composed of the bodies of seals and birds, more than the excrements of birds. My friends told me it was ten years since they first visited the islands, and that the south one had undergone no change. The bodies of the seals were then as they now are, which proves decomposition of bodies in and on guano takes a long time. Eggs, in a sort of petrified state, are frequently found many feet deep in guano. Much sal-ammoniac, in pieces from the size of a marble to a man's fist, is also found some ten to twenty feet from the surface. I have some now in my possession, the scent of which is as powerful as any sal-volatile I ever smelt.

"When last I was at the Chinchas, in October, 1857, they were shipping 40,000 tons of guano monthly, to Europe and America, and, at that rate, it was expected to last eight years. The guano on the north and middle islands is about half done. The greatest depth on the north island is fifty-five feet, and on the middle about forty-five. The south has the least—twenty-five. The base of the three are the same, viz., rocky; of what kind I cannot say, but the same as the rocks on the south coast of Ireland. On each of the islands that are being worked, are many miserable huts for the labourers, and vagabond Peruvians, with merchandise from Pisco. The governor is a Peruvian colonel, who has 100 soldiers under his command, to keep the Chinese slaves and the Peruvian labourers in order. There are about 800 Chinese, who were

brought over from China in English ships, chartered by the Peruvian government to bring Chinese emigrants to California, but which were to call at Pisco for orders; and, when the ships arrived at Pisco, the poor Chinese were landed, and made virtually slaves; but, as they each get two dollars per month, they receive a wage.

"Ships anchor close to the islands, in deep water, from twenty to fifty fathoms. I anchored in forty, about half a mile from the shore. Beef and vegetables are brought from Pisco. The price of meat, which is very inferior, is 7d. per pound. Ships bring water with them from Callao, and are bound by charter-party to land a certain quantity on the islands, by which means they are supplied with water. The ships are loaded either by boats or under a shoot, where the ship is moored close to the rocks, and the guano run down from a height of 110 feet. I loaded by the latter, and took in 1,300 tons in four days. The place abounds in fish, but not of a very first-rate quality, being principally albecore, horse mackerel, and a sort of mullet. At certain seasons flying-fish are very abundant. The islands are the property of the Peruvian government, who commission Messrs. Gibbs to charter ships and sell the guano.—J. BULFORD.

BEDDING OUT.

EVERY gardener has his own way of planting his bedding plants, and, if we could gather up the different methods into a long yarn, I would vouch for it, that Captain Marryat never spun a more droll story—the shifts, the accidents, the mistaking one kind for another, the misunderstanding of orders, the breaking down of the hand-barrow, and the mixing of tallies, are but as drops in the bucket, compared to the ups and downs of these three weeks' chronicles of the bedding out "principle." Botheration to the whole system! Why could not people put up with the old, honest, mixed borders? Why give heed to those crack-brained writers on bedding plants, fancy ribbons, love-knots, shaded and pincushion beds, and goodness knows how many more fancy plantings besides, to say nothing of the trouble, the loss, and the danger of removing spring flowers in the face of a burning sun, or a searching easterly wind; enough to drive a man to madness; and, with it all, not a "collection" of plants to be met with now in the best places in the three kingdoms; nothing but bedding plants. Very hard, certainly; but who can help it? Fashion will carry the day, no matter how it comes, or when it goes. The highest aim of the deity of fashion in the flower garden, is still the shaded bed, and, that point once gained, we may expect some changes for the better; but that is all we may look for in our day. Mixed borders we all have, or ought to have; but the mixed border of these days is as the Linnæan system of botany at the present period—very good for children's gardens, and to make a beginning with in the world of flowers. The whole thing lies between the Doctor and the ladies. He would put the "natural system" of botany into the mouths of babes and nursing maids; and they, the ladies, will have their bedding out, their shades, their colours, and their crinoline, as naturally done, as any "system" that was ever invented. To abuse the "system," therefore, or to find fault with those who write about it, is just like fighting against the air. We take no heed of such things. All you say against that system must necessarily go in at one ear and out at the other, and be as if it never had been said.

The richest colour we had in the Experimental Garden, this spring, was that of the vermilion *Brilliant* Tulip; and, after trying it with all our spring flowers, we have come to the conclusion that not one of them will do to contrast with it, that is, to "set it off," or heighten its own effect. Therefore, we shall have it next year in six, or eight, large vases, which will be bordered, or edged, with *Aubrietia purpurea*, a pale

blue, to soften the strong contrast between the white of the vases and the very deep crimson of this Tulip. The best yellows we had this spring were, first, *Doronicum Austriacum*; next, a fine soft yellow Polyanthus; then, the old yellow Alyssum; and, a few days later, the newer yellow ditto, called *Gemonense*, the one we had from Mr. Rivers; and lastly, a most useful yellow, bedding Pansy, a large, deep yellow flower, with a dark eye, one of two bedding kinds which were sent by Mr. Sians, of the nurseries, Foot's Cray, Kent, one of which did not survive the journey. This Pansy bloomed from the 5th of May, this season; but generally it flowers from the end of April, till stopped by the frost, and is the most useful of all the Pansies. *Arabis grandiflora*, a variety of *Alpina*, is our earliest white spring flower. It grows in all the gardens hereabouts "like a weed." We cannot anywhere find *Anemone amplexicaulis*, which is the second earliest white that is really good. The third earliest white, a fine thing, is *Anemone nemorosa flore-pleno*, which seems to be an earlier and dwarf variety of *sylvestris*, the common Snowdrop Anemone. *Anemone ranunculoides* comes in one month earlier by the help of a cold frame all the winter—we had it five weeks in bloom in a pot; and in the open border it comes just one month behind the frame plant. *Anemone Apennina*, a light blue, will succeed the blue Hepatica in spring, and look like it at a distance. It is also a nice pot plant to come in-doors all through April. *Anemone palmata* is just coming into bloom under a west wall, and *Saxifraga granulata flore-pleno* was in full bloom on the 10th of May. *Iberis unifolia* is the best of the family. It has the compact habit of a true bedder, and is one sheet of white from the 20th of April, and will last to the end of May. The double Crowfoot, the richest yellow of all our native plants, will follow it, and last another six weeks. The white and pink *Silene pendula*, like all spring flowers this season, are later than usual; but I name them as common things, to show how easily we graft the spring flowers on the bedding system.

Every one of our spring bulbs, and other spring flowers, and autumn sown annuals, are planted in regular rows, and at such and such distances from the edge, and from one another, that we can bed out the bedding plants without hurting one of them; and this we are now compelled to do, as most of our spring flowers are hardly past their prime at the middle of the month. Last year, we lifted about two dozen large herbaceous Pæonies when the bloom was over, and only returned them last February, and they seem to bloom all the better for the check and change: that was a good hit. What is the use of keeping great lumpy plants of herbaceous Pæonies in sight after they are out of bloom, even in a mixed border, when scores of plants are waiting in pots for room to show off their beauty.

We never make cuttings of the variegated Mint now. We fork out the old plants in the spring, and cut them up into two or three joints, and plant the pieces in April, and they are all over the ground by the time the rest of the bedders have got hold of the ground. We do not make cuttings of *Oenothera prostrata* till after the 10th of May, as, by that plan, they are in bloom by the time they are rooted, or nearly so, and no strength of soil, or kind of season, will cause them to run too much to leaf after that. The old plants are divided after the cuttings are taken; and, after docking their roots to one half their length, we use them to edge and hang over rustic baskets, vases, and in any dry, poor soil about the garden, where they bloom most profusely the whole season; but on our soil we should have no good from them, unless we divided them, and shortened their old roots and tops late in the spring.

We have just planted out 1,300 scarlet Geraniums,

of sorts, which were never in a pot; about one-third of the number were half standards, as one might say, with clean stems of from nine to eighteen inches. The eyes were picked out of closely-planted seedlings last year;—these will never throw up suckers, and will be capital stock for the back, or near the back, rows of ribbons. They were planted out in a cold pit last October in three inches deep of very light compost, and had about three waterings all the winter. In taking them up for planting, they would not carry one particle of soil with the roots; it was so light and dry, that it would not adhere to the roots, and that is the principal reason why I mention them; as, throughout my bedding experience, I have always found that the less soil one had about the roots of bedding plants, at the time of planting, the more safely the work was done in the hands of most of the new and young beginners. When one has from twelve to twenty hands, at a push, in planting, and only four or five of their number are up to the mark, all that can be done is, to give out the ball plants to the four or five—the best planters. Anybody can plant a Cabbage-plant, if the ground is dug and lined off for him, as well and as safely as a philosopher could do; and the Cabbage is safe enough, and sure to grow; and the reason is, that there is no ball of earth to the roots of a Cabbage-plant. But it is not everybody, nor yet everyone of the *philosophers* that can be trusted to plant a plant that has a ball; and yet, when you come to think of it, would it not sound more reasonable to say, that a plant with a ball to its roots would be more easy and more safe to plant than one with no earth at all to the roots. No; not a bit of it; the thing depends on the skill and experience of the planter. Some can plant any way, or any how, and their plants will do, and be safe under all circumstances; but for every safe planter, there are ten men who are not safe to trust to plant balls, and my rule has been, to have as little soil to the roots as possible for planting out.

Well, the great secret of keeping old bedding Geraniums in winter, is to have as little earth about their roots as possible, and not to be in pots, if one can help it, that is to say, provided they are to be wintered on the shift system. When one has large greenhouses, or vineries, or pits, it is best to have the Geraniums in pots, in the usual way; but, when one comes to have them by the thousand on the shift system, what I say is the best way.

We had a most capital contrivance to winter another large lot of old Geraniums last winter, and, as the *Tom Thumbs* did very well in it, there need be no fears about it. An old Thorn Acacia was sawn into boards and made like beer coolers, four feet wide, and four inches deep. These beer coolers were raised on tressels, made out of the Acacia, and placed along the front of the "old laundry," which has glass windows along that front, but all the rest is plastered like a common room. The plants were planted in the beer coolers, with a depth of four inches of soil only. A set of two-inch hot-water pipes was fixed to the copper of the laundry, and the whole turned out capitally.

D. BEATON.

HARDY FERNS.

(Continued from page 84.)

PROPAGATION.—*By Seed*.—It is only for very rare species, that this mode of increasing the number need be resorted to—such, for instance, as the *Woodsias*, the *Trichomanes*, and the American species. Save the seed as soon as it is ripe, which may be known by the bursting of the seed cases. The seed is exceedingly small, appearing like brown dust, every particle of which must be carefully preserved. Though so small,

as to be almost invisible without the aid of a magnifier, yet its powers of germinating are remarkable. The elder Mr. Shepherd, of the Botanic Gardens, at Liverpool, succeeded in raising some Ferns, the seeds of which were brushed off some fronds that had been in his herbarium for ten years. I would not, however, advise the cultivator to keep his Fern seed any such length of time. If it has been saved early in the summer, sow part immediately, and the rest in spring, about April. To ensure success, prepare a sufficient number of shallow garden pans, with bellglasses to fit. Drain them well, and fill them with sandy heath mould, sifting a small part very fine for the surface. Press it down firmly, and lay on the surface a number of very small sandy stones; then sprinkle the seed on the whole, and cover with the glasses. Pack some moss round the rim of the pans, at the bottom of the bellglasses, to keep in the moisture. This moss also prevents the washing away of the soil. Water must be given only upon this moss. It will enter the soil inside by capillary attraction, and keep it sufficiently moist. To prevent it drying, the glasses must be shaded from the sun. The best position for these seed pans will be in a cold frame, where the sun does not shine till towards evening. I choose evening, for the reason that a little heat will be thrown into the frame, and serve to keep up a rather warmer atmosphere than the open air.

There is a difficulty about this mode, or, indeed, any other mode, of raising Ferns from seed, and that is, the pulling up any weeds that will spring up from the seed. I have prevented this by baking, not burning, the soil on a flue, or in an oven, till all the seeds in it were effectually destroyed. This fiery process also kills the eggs and larva of insects. The soil, when sufficiently baked, may be moistened gradually, by laying upon a moist cloth, and covered with another cloth: gardener like, I always used a bass mat for that purpose. It will take several days to moisten it sufficiently. I prefer this gradual moistening to the more ready one of wetting it by means of the water-pot.

Supposing all these points have been strictly attended to, and everything gone on well, the Ferns will soon make their appearance. The soil and stones will appear as if covered with green scales, from the base of which the first tiny frond will spring. It is very curious, and exceedingly interesting, to watch the progress of the germination and development of these young Ferns. Be very careful, however, to keep the soil moderately moist, and keep the glasses constantly on, to keep up an internal moist atmosphere. It has often been, to me, a matter of surprise how Fern seeds germinate and grow in their native localities. It can only be accounted for by the immense number of seeds each plant produces. Thousands and tens of thousands must perish for want of a proper pabulum and of circumstances favourable to their growth; but the profusion of seed renders the entire loss of any species impossible.

To return to our seedlings. Under our careful management, as soon as the third frond appears, it will be time to think about potting them off—a most delicate operation. Take off the glass, and examine the small stones first; there is no difficulty with them. Take up each stone that has a Fern on it, and plunge the stone just within the soil in the tiny pot you have prepared for it, leaving the frond just above the soil. For such delicate rock-loving species as *Woodsia hyperborea*, a native of the Scotch mountains, I have added to the heath mould some pieces of sandstone about the size of swan shot. This keeps the soil open, both to the influences of the air and the water. After potting all off, replace them in the frame, and keep them close for a month; then gradually inure them

to bear the open air; and when large enough, plant them out in the fernery.

This may appear a tedious process, but the results, when successful, will repay all the trouble. The owner may, if he chooses, dispose of his surplus stock to some nurseryman; or he may exchange with other growers that have not the means of raising seedlings.

Another rougher mode of propagating hardy Ferns from seed, is to place some small pieces of sandstone, or even bricks, on the soil, in a shady, moist place; then sprinkle the seed upon them, and cover the whole with a handglass. Many good kinds of Ferns have been raised in great numbers by this method.

By Division.—Many species of Ferns send forth creeping rhizomas or root-stocks; such are easily increased by taking off one or more of their offshoots. They may either be planted in a bed by themselves, and shaded till they are established; or, which is the better plan, be potted in suitable sized pots, placed in a cold frame, and kept close, and shaded for a week or two; and, when fully rooted, planted out in the fernery, where they are required to grow. Other kinds, that do not have creeping roots, will, when of a considerable size, produce small side-shoots, which, as soon as they produce roots, may be taken off with a sharp knife, potted, and treated like those mentioned above. Some other species grow in a compact form, of which the *Parsley-leaved Fern* and *Wall Rue Fern* are examples. These must be taken up, and divided into as many pieces as will give a fair share of roots to each pot; put each division into a small pot, and shade them till fresh fronds and roots are produced. All these operations are pleasant and recreative, giving useful and innocent amusement to many persons in every rank of life.

T. APPLEBY.

(To be continued.)

RED SPIDER ON WALL FRUIT.

It would be superfluous to say anything in favour of the remarkably fine weather we had from the 13th to the end of March, or of the favourable opportunity we had of getting the bulk of our work under our thumb. But, I will just say that, at the very time we were rejoicing at the progress we were making in digging, and planting, and getting in the early seeds, with other work of a preparatory nature, under such favourable circumstances, we little thought (at least, some of us) how favourable those hot days were to the production of one of the greatest enemies to our fruit trees, viz., the red spider. Though, perhaps, there may be some that have found it out ere this to their cost, to the tune of the loss of the first of the foliage of their Peaches and Nectarines.

It is universally admitted, that prevention is better than cure, and, endeavouring to act upon this principle, I began examining my trees as soon as the buds began to push; but, to my surprise, I found they had stolen a march on me, for, on unfolding the leaf buds, I found them there almost as thick as they could be packed together.

Now, this was a manoeuvre which I was puzzled how to bring my force to bear upon. The preparation of lime and sulphur, you have so frequently recommended, I had previously used with success: but then the leaves were generally pretty well developed, so that I could see their effects before I began to look for the cause; and, as generally happened, a good many of the earliest of the leaves would shrivel up and drop off just as the fruit was setting, which was charged to the account of Frost, Sun, and Co., though now, I believe, not altogether justifiably.

Neither was this all, for, on taking off some of the blossoms, and opening them, they were literally lined with them. This was another staggerer. The trees were in full bloom, and nothing could look more promising, both as to quantity and quality of bloom. "Well," I said, mentally, "I have faith in the wash I have always applied; but then, to apply it with the trees in full bloom, how then? I don't know what to do." Well, I pondered over it all day, and at night I called a

council in the kitchen, where I, at some considerable length, stated my difficulties, enlarging on the consequence of the loss of the crop of fruit. Should I deluge the wall and trees with the above wash, and fill every blossom full of it? or should I let them remain till the fruit had set? Providing any should set, would the trees be able to perfect the fruit, or would they be permanently injured? I also read numerous and lengthy passages from several volumes of *THE COTTAGE GARDENER*; and, although nothing that I could meet with had any direct bearing on the point, yet I thought it might bring out some bright idea, or common-sense suggestion, from some member of the council, or assist myself in coming to some determinate point to act upon, independent of their suggestions, which I endeavoured to collect by calling on Mary, the housemaid, first, for two reasons: the first, because her loquacity was so great she could not be constrained for a moment; the other reason was,—but no matter;—and, to do her justice, I must say there were no lack of suggestions, for she advised me to try every remedy I had touched upon, with some addition, or some peculiar way of her own, in application, which involved the necessity of her attendance.

I next desired Thomas, the footman, to oblige me with his suggestions. Now, I was in the habit of receiving much assistance from him, physically, daily; but mentally, so far as gardening matters are concerned, he was a total blank. His opinion was—"Let them alone; if they live, they live; if they die, they die." Had it been upon any other subject, I doubt not but he would have given me much better advice; but the "nicknacks" of gardening were to him worse than solitary confinement. This seems strange for one in his capacity, yet he would rather cut down a whole orchard than be obliged to prune a single tree.

Now, there being only one other member of the council to that member I looked with anxiety; for her opinion was generally law, particularly in the apartment then occupied. I recollect, some time ago, Mr. Appleby, amongst much other good and sound advice to young gardeners, told them they should keep on good terms with the cooks generally. Now, had he been the father of all the young gardeners that read *THE COTTAGE GARDENER*, he could not have given them sounder advice; for, independent of the persuasive arguments they can produce in their domestic capacity, they have generally passed through the frivolities of youth, and arrived at the years of discretion. Such is our cook individually; a woman of good, everyday common-sense, which is of far more value to mankind in general, and to me in particular, than all the advantages derived from the introduction of crinoline, or the scarlet petticoat: in fact, it is the cash currency in the business of life. Therefore, when I say I looked with anxiety for her advice, I at the same time had confidence that, if she could not relieve me from my difficulties, she would not increase them, which proved to be the fact; for, on asking for her advice, she said I had better draw upon my past experience in theory and practice, and do what I thought was best. "Think," she said, "and then act; never act, then think." Some people, and perhaps young people too, may think lightly of asking advice, or exposing one's weakness, if not ignorance, in the above manner: but, if mankind generally were as free and as sincere in asking advice as they are in giving it, we should be better able to contend against the difficulties that beset our path in the walk through life than we generally are; and I saw at once that I had taken the very best method I could have done, under the present circumstances, to enable me to resist the further progress of the enemy.

On the following morning, I got the bucket and the housemaid's brush, and with the above wash, and with the sun shining warmly against the wall, I began dressing their jackets. I have always made a point of dressing them during sunshine, as it dries on the leaves so quickly; though, if in the morning, I shade afterwards with Haythorn's netting.

The manner of dressing is this:—at a time when there is little else but blossoms on the trees, dip the brush into the bucket of wash, and then give it a jerk after the manner of sprinkling, which throws it off in very small particles, and forces it into the buds, and fills the opened blossoms also. This practice I followed every alternate day, till the leaves were two inches long; and now (May 10th) I have thinned full two-thirds of the fruit, still not sufficiently. With regard

to the state of the trees now, I enclose a few leaves for your inspection; also a few leaves, to show the depredation the enemy was making, and the effects on the same leaf after dressing, *i. e.*, the portion of leaf afterwards developed.

Some people, under more favourable circumstances, may think, had I taken Thomas's advice, and saved myself all my trouble, I should have been in about the same position as I am at present: but it is not the fact; because I left a small branch, that reached somewhat beyond the rest, a strong branch too, and well furnished with blossom, that I did not dress, just to see the result, which is this,—I could add fruit to that branch instead of taking from it; and, at the present time, there is not a leaf an inch long; they all shrivelled up, as though they had been scorched, then fell off.—*THE DOCTOR'S BOY.*

FUMIGATING PLANTS.

OBSERVING a receipt from "SIMPLEX," in *THE COTTAGE GARDENER* for April, for easy fumigation, I beg to hand you another, which I know from experience never fails, and is a still easier method; the plan was taught me by a foreman gardener, so I claim no originality of idea; but, perhaps, the hint may be acceptable to amateurs as it was to me.

Get a wire riddle, or sieve, an article which ought to be in the possession of every one who pots flowers, and place it, bottom upwards, on three inverted flower pots; either on the floor, or lowest shelf of the greenhouse; then, on the riddle, put a few red-hot cinders, and on these some of the commonest rag tobacco, which may be obtained at the shop of every village, but where there would be considerable difficulty in procuring "good leaf tobacco." If economy is desired, mix double the quantity of damp moss with the tobacco, waive the riddle gently up and down to cause the draught to thoroughly ignite the moss, &c., replace it on the inverted pots, retire immediately, close doors and windows, and do not go in until the next morning, when the plants should be well syringed with rain water. I do this twice a year, at a cost of 7d. each time, and I keep my little greenhouse clear from blight, and all my plants clean and healthy.—G. D.

A DESCRIPTIVE LIST OF POTATOES.

(Continued from page 74.)

THE FLUKE.—This very popular variety is now generally well known; therefore, any comments upon it would be useless. I have previously given its origin, and my own opinion respecting its merits. I may here state it is a variety that may be easily distinguished, by the haulm being distinct in colour (dark green, like that of the Nightshade) from any other.

JERSEY BLUE.—This Potato was at one time very much cultivated, and was considered a good variety. It is a *Kidney*, rather deep in the eye, and uneven. It is also very liable to the disease. Full size, strong haulm, and tolerable cropper.

JERSEY WHITE.—Like the above, is fast going out of cultivation. It is a long, narrow *Kidney*, good eye, rather productive, and moderate haulm. When grown on stiff land it boils waxy. This variety is also grown under the name of *Field's Kidney*.

WALKER'S LARGE WHITE, commonly termed a second early. It is a very large Potato, similar to the *Wellington* and *Farmer's Glory*. Rather deep eye, a good cropper, excellent for baking, strong haulm.

CHAMPION ASH-LEAF is one of the many varieties termed *Ash-leaf Kidney*. It is, however, a better cropper than most of the varieties. Very early, excellent flavour, and short haulm. This variety was sent out in 1855.

BRIGHTON KIDNEY.—This variety I have not yet grown; but, judging by the tubers I have by me, it is another variety of *Ash-leaf*.

EARLY MANLEY.—This is a kind of kidney-shaped Potato. Moderate eye, not large tubers, but very productive. This variety is not a general favourite, being rather waxy and yellow when boiled. Rather a strong grower.

EARLY GLOUCESTER.—This variety is similar, if not the same as the *Radical*. It is an excellent round Potato, boils very white and mealy, moderate-sized tubers, good eye, tolerable cropper, not a very strong grower.

HODGSON'S SEEDLING.—This is a kind of *Regent*. It is a

good variety, full size, even eye, moderate cropper, not a luxuriant grower. An excellent keeping variety.

YELLOW TOP.—I do not know the proper name of this variety. It is quite distinct in colour of foliage from any other Potato I ever saw, being almost yellow. I first met with this variety at Kemerton, in Gloucestershire, growing in the garden of a cottager, and I can truly say I was delighted with its singular appearance. It was then growing between some *Regents* and *Alstone Kidneys*, which still made it appear more effective. I inquired of the poor man that owned them the name of these peculiar-looking Potatoes. He told me a

friend gave them to him, who did not know their name; but he said they call them the *Yellow Top*. He also told me persons would frequently tell him his Potatoes were diseased in the tops, and that he had better get them up before the remainder of his crop got affected. This Potato is certainly a novelty; its habit is peculiar, being very short and stout in the haulm, the foliage very broad and even round the edge of the old leaves; the tubers are full size, yellow and waxy; not a heavy cropper; and a late variety.—**EDWARD BENNETT, Perdiswell.**

(To be continued.)

CONSOLIDA ACONITI.

RAISED from seeds presented by H. Calvert, Esq., C.M.H.S., of Erzeroun.

A weak, erect Annual, about one-and-a-half foot high, with a very slight covering of silky hairs upon all the green parts. The leaves are divided into from three to five pedate, linear, taper-pointed lobes. The flowers form a loose, straggling, somewhat zigzag raceme, the peduncles of which are from one-and-a-half to two inches long, with about one awl-shaped bract above the middle. The flowers, which grow singly, are of a deep bluish lavender-colour, with the following structure. The calyx consists of five coloured, oblong sepals, of which four hang downwards, the side ones being the broadest, and the fifth, which is turned in an exactly opposite direction, is extended into a horizontal, blunt, hairy spur, with a short, narrow, ovate, acute limb. The corolla consists of two petals, united by their back edge into one simple, somewhat fleshy spur, enclosed within that of the fifth sepal, and with a hooded limb, having four small round lobes at its point, and two larger, oblong, lateral ones. The solitary carpel slightly projects beyond the declinate stamens. De Candolle and others speak of the petaline spur being slit on the upper side, a structure of which I find no trace.

Forskahl regarded this curious plant, it is said, as an *Aconitum*; Linnaeus considered it a *Delphinium*. In reality it is neither the one nor the other. Its united petals, and long, sepaline spur, are at variance with the distinct, hammer-headed petals, and convex, back sepal of *Aconite*. Its petals, being reduced to two, and those completely combined into one, equally remove it from *Delphinium*. That the petaline body is really composed of two parts only seems to be proved by its origin, which looks as if opposite the back sepal, in consequence of the union of the two contiguous edges of the lateral petals. But it is completely separated from the front sepals, with which it does not in any degree alternate. These considerations lead to the conclusion that the old genus *Consolida* should be re-established, and by no means confounded with *Delphinium* proper.

In a scientific point of view, this is a highly-interesting species; but its growth is too feeble, and its flowers and leaves too diminutive and straggling, to give it any horticultural value.—(*Horticultural Society's Journal.*)



FLORISTS' FLOWERS.

THE CARNATION.

THERE is a considerable amount of new varieties of both Carnations and Picotees. Mr. Puxley has been more than commonly successful, and there are others that have been fortunate in the same way, as my annual list given below will testify.

If the amateur has not already placed all his plants intended for blooming, no time should be lost in getting that operation performed. It is, however, not too late to order the new kinds, for the season is a more than usually backward

one, especially north of London. See former numbers, and the *Cottage Gardeners' Dictionary*, for culture.

TWELVE SELECTED NEW VARIETIES.

Esther (Dodwell), a purple flake; perfectly pure, finely marked, smooth, and very constant.

Favourite (Addis), a purple flake; of great substance, well formed, and constant.

Grand Monarch (Puxley), a full-sized scarlet bizarre; well marked, full, and of a good form.

John Bayley (Dodwell), a scarlet flake; of fine habit, pure white ground, with rich scarlet stripes, smooth edge, and constant.

Lord Raglan (Puxley), a bright scarlet bizarre; of medium size, and fine form.

Mr. Tugwell (Puxley), one of the best scarlet flakes; large, very smooth, and well marked.

Premier (Puxley), crimson bizarre; well defined, smooth edge, and constant.—10s. 6d. per pair.

Coronation (Puxley), a scarlet flake; large, full, and well marked.

Nancy (Turner), a large rose flake; of fine properties. A class that needs improvement.

Royal Purple (Puxley), a purple flake; large and distinct.

Royal Scarlet (Puxley), a large full scarlet flake, of excellent qualities.

Shakespeare (Puxley), a pink bizarre; large and fine.—7s. 6d. per pair.

EIGHTEEN OLDER VARIETIES.

SCARLET BIZARRES.

Adam Curzon (Easom).

Coriolanus (May).

Omar Pacha (Puxley).

CRIMSON BIZARRES.

Admiral Dundas (May).

Chancellor (Puxley).

Prince of Oldenburgh (Puxley).

PINK AND PURPLE BIZARRES.

Henry Kirk White (Taylor).

John of Gaunt (May).

Sir Colin Campbell (Puxley).

PURPLE FLAKES.

Colonel Windham (Holland).

Earl Stamford (Elliott).

Regulator (Bowers).

SCARLET FLAKES.

Christopher Sly (May).

Defiance (Puxley).

Victoria Regina (May).

ROSE FLAKES.

Flora's Garland (Brooks).

Lord Belper (Turner).

Poor Tom (May).

—T. APPLEBY.

CRYSTAL PALACE HORTICULTURAL EXHIBITION.

THIS took place on the 22nd instant, and, as far as the display and arrangement of plants and flowers, was a decided improvement over previous exhibitions. The attendance of visitors, also, was more numerous, and everything praiseworthy, except the non-facilities afforded for the admission of reporters. Their admission was so neglected, that "our special correspondent" was unable to finish his notes in time for this week. We give the Prize List elsewhere.

POND COVERED WITH GREEN SCUM.

SEEING that your correspondent "G. C." has a pond covered with green scum, I beg to suggest a remedy which I have found effective. We have a large canal and bason which used to be covered with slime and Duck-weed, and we put three ducks and a drake in, and they keep it quite clean.—W. C., Wandsworth.

THE FRESH WATER AQUARIUM.

(Continued from page 87.)

We shall now notice the various vessels available as aquaria, beginning with

THE COTTAGER'S VASE.

This is a very simple, yet serviceable affair, being merely an ordinary gardener's bellglass, inverted in a saucer of sand.

For a dusty room, a sheet of thin glass must be cut a little larger than the top, to serve as an occasional cover.

The cost is as follows:—

	s.	d.
One gardener's propagating glass, 10 inches in diameter	1	4
Deep saucer, glass outside	0	1
Glass octagon	0	6
Sand	0	1
	2	0

THE AQUARIUM FERNERY.

This arrangement provides accommodation for a few plants of that beautiful family—the Ferns. A bellglass, ten inches diameter, is inverted on a stand of turned wood. At equal distances around its upper edges, are hung three pieces of zinc, of an shape, forming supports to an upper nine-inch bellglass, the rim of which rests in the lower curve of the S. The Fern saucer is supported by a thin flower vase, standing firmly on the bottom of the aquarium. (See Fig. in COTTAGE GARDENER, Vol. XVII., p. 205.)

Some of our cottager friends will exclaim, "It's quite out of the question for me to buy Ferns." Ah! my friend, you greatly neglect "the poor man's garden," provided for your gratification. Supposing your children, who now spend the day long, sitting down by the roadside throwing dust about, making mud pies, or getting into all manner of mischief, had been brought up with a love of the beautiful in Nature, you might then have a handsome nosegay on your table most months in the year, which would cheer up your sitting apartments, and prove a ray of light to brighten your cottage homes. To return to our subject. Suitable Ferns for the required purpose may be found in most of our lanes; among them the *Hart's Tongue*, common Polypody; *Black Adiantum*, female Fern (young specimens). But we shall speak of stocking hereafter.

FERNERY AQUARIUM.

	s.	d.
One gardener's propagating glass, 10 inches in diameter	1	4
One " " " 9 inches in diameter	1	2
Turned deal stand	0	9
Zinc hooks	0	2
Flower glass	1	0
Glass saucer	0	6
	4	11

IMPROVED CIRCULAR AQUARIA.

These are now furnished by the makers of a stronger and whiter glass than those used for horticultural purposes, and the curve of the sides so proportioned, as to admit of a small amount of refraction. The sketch given at page 87, is from an aquarium of this description, which has been in constant use for more than two years.

Glasses of more than thirteen inches diameter are unsafe, being liable to crack during sudden changes of temperature.

The price of an aquarium twelve inches diameter, including imitation-ebony moulded stand, is five shillings. Thirteen inches ditto, six shillings.

The aquarian should be acquainted with the quantity of water which will be required to fill his vase or tank. In case he cannot obtain information where purchasing, the following rule will be found applicable to any vessel, from bellglasses to water-works reservoirs:—

Divide the number of cubic inches of space contained within the glass walls by 277; the quotient will be in gallons.

The contents of the above engraved aquarium are thus ascertained.

1st. measurement, 9 ins. in depth, and 12 ins. in diameter.

2nd. measurement, 3 ins. in depth, and 10 ins. "

12 ins. average depth.

$3 \cdot 141 \times 36$ (square of 1st radius) = 113·07 (area of base).

$3 \cdot 141 \times 25$ (square of 2nd radius) = 78·52 "

$113 \cdot 07 \times 9$ (depth of 1st measurement) = 1017·63 cubic ins.

$78 \cdot 52 \times 3$ (depth of 2nd measurement) = 235·56 "

Total contents in cubic inches 1253·19

$1253 \div 277 = 4\frac{1}{2}$ gallons capacity.

$4\frac{1}{2} \times 10 = 45$ lbs. weight of water.

The result was useful, for knowing every gallon of water

was equal to about 10 lbs. weight, the pressure which the supporting table would have to sustain, was at once manifest, as forty-five pounds.

With a rectangular aquarium, though the same rule is made use of, the calculation is much simplified.

Thus a tank 24 ins. × 12 ins. × 9 ins. inside measurement

Ins.	Ins.	Sq. ins.	Cub. ins.	Gallons.
24	× 12	= 288	× 2592 ÷ 277	= 9

will contain 9 gallons of water, weighing 9 lbs.

In conclusion, let me ask the cottager to look a little more into the works of God in Nature, he will then see how very far they excel all productions of human art. When a man enjoys the loveliness of creation here, he is able to understand more thoroughly, what a happy, glorious world, that better land must be, which is beyond the grave, of which it is said, "Eye hath not seen, nor ear heard, neither have entered into the heart of man, the things which God hath prepared for them that love Him."—E. A. COPLAND.

GARDENING ECONOMICS—PRICE OF ARTICLES.

"COULD you inform me the price of ice? I send to the house a barrow-load at a time, and know not what to charge for it. Could you give me any information respecting the value of flowers? I am in the habit of supplying a small basketful of choice kinds, such as Camellias, Ericas, Acacias, Azaleas, Daphnes, Roses, &c."—PRO BONO PUBLICO.

"Is there any rule of charge for a gardener supplying the family by contract? If there is, it would be useful information to employers and young gardeners."—G. W. J.

"I have kept an account of all outgoings for the garden this year, and have calculated the value of everything that has come to my table, and find that I could have been cheaper supplied at Covent Garden prices. The gardener says that much had to be given and thrown away, for which there was no market to be had in the neighbourhood, and that, besides mere eatables, there was much time and labour involved in getting flowers for the ladies; but these I care nothing about, and, therefore, can allow no value for them. Flowers, indeed! as a matter of value! Why should I keep a garden, if I can get what I want cheaper and better from markets?"—LOOK SHARP.

"My coal bill since last November has been excessive. Flowers, it is true, have been forced, but one cannot eat them. I have, it is true, some good black Grapes ripe, and I would willingly sell some to lessen the expense; but the fruiterer says he cannot afford more than 3s. per pound for them, and the gardener says they are worth four times that money. (Try Covent Garden.) I would rather have them at little cost in September."—ECONOMICUS.

"My kitchen garden is about an acre. Loudon says that one man should manage an acre. There are some frames and a little house or two, and more than an acre of lawn and flower-beds; but these, to keep them neat, can require only a brush over with the scythe, now and then; and I keep three men and a boy. I am sure I do not get the value of two men's labour, in the *real useful things* that come to my table. They seem very active, and constantly employed, but something must be wrong, when I get so little return for my money."—A GRUMBLER.

"I noticed that, in the neighbourhood of London, the market-gardeners take several crops off the same ground in the year. Why should not I obtain the same results from my kitchen garden, and thus economise space, and get greater quantity and better quality? Why should our gardeners not crop as market-gardeners do?"—FAIR PLAY.

These are merely a sample of the inquiries and complaints, that have been presented to me through our conductors and others, and I much regret that I am not in a position to meet the various cases. I have delayed the matter for a week, hoping to have more decided replies to questions I put to those fully competent to answer them; but these have not as yet arrived. That the matters may not be lost sight of, I have thus presented them to general consideration, and

will content myself with making a few preliminary observations.

1. *Supplying a family by contract.*—There would be great difficulty in establishing any general rule on this subject. It is seldom adopted, unless where the garden is let, and then it seldom proves satisfactory to either party, unless a clear specification is previously drawn out, just as in any other contract; and even then there will be heartburnings, as to deficiencies and extras, unless there is a large-hearted forbearance on both sides. In all such cases the resident, or the proprietor, must form no exuberant hopes of the comfort, or pleasure, he is to derive from his garden; unless he looks upon everything just as the gardener will be forced to do, in the light of market utility. The difficulties of forming any definite rule, either from the number to be supplied, or other causes, will be increased from the different tastes and requirements of different families; and also from the different circumstances as to the garden, whether fertile and easily worked, or the reverse, and whether near to, or far from, a suitable market for disposing of the overplus. Some years ago, I was asked what a man could afford to give for a large kitchen garden a-year, to keep up the wall trees, and to crop it as a kitchen garden; and, considering the circumstances, I stated, that instead of paying anything at all, I would sooner give £8 per acre for land on the west side of London. If a large establishment had been to be supplied from it, that would have altered the case. If the ground could have been treated as a small farm, then a proportionate rent might have been paid, with an additional allowance for fruit trees; but the distance from a market, and the stiffish nature of the soil, rendered a high rent out of the question.

2. *Profitable cropping.*—There can be no doubt, that gentlemen's gardeners would be benefited, by observing and studying the systems adopted by market-gardeners, who supply London, and other large towns. It is a fallacy, however, to consider us wholly ignorant of such systems. They who please to write up our ignorance in such matters, would be surprised to see how quickly we can adopt such systems, when our consumers are the public, instead of a private family. In the latter case, the supply in any one thing, on the market garden plan, would soon exceed the possible demand, or consumption, and if there were no profitable outlet, the remainder would be comparatively lost. In the former case, such as in the neighbourhood of London, and other large towns, the supply as yet has seldom exceeded the demand. True, a glut in the market at times, will bring down certain articles, so as hardly, individually, to be within remunerative point; but it is seldom, or never, necessary to take these articles home unsold, as the lowering of price places them at once within the reach of large classes, that cannot obtain them when comparatively dear. The market-gardener seldom loses any part of his crop, because he clears it off his ground as soon as it is at its best. In small towns, his great aim should be, to be first in the market, and then not to have so much at a time as to glut the market, and thus lower the market value. Competition will be sure to effect this at times, and then the masses of the public get the advantage of it. The produce, at the lowest, always brings something. Hence it is the interest of the producer to clear his ground as soon as possible, in order that he may fill it again. If "FAIR PLAY's" gardener cropped in the same manner, he need not be surprised if a barrow-load of early Turnips were brought to his kitchen one morning; a vanful of Cos Lettuce the next; a cart-load of Cauliflowers on a third; and several sacksful of Peas on a fourth; and then days, or weeks, elapse before he saw either of them again. This is pretty much

how the public would be served, if they were dependent upon one producer, who cropped upon the market-garden principle, and had not an almost unlimited command of ground. The market is kept somewhat regularly supplied, because there are many hundreds of producers, and these are placed in a vast variety of circumstances, as respects position, soil, climate, &c. A gentleman walks through Covent Garden in April and May, and grumbles that he does not have abundance of such things in his garden, in Yorkshire. Did it never strike him, that if such things were not forced, that they came from France, from Belgium, Holland, Algiers, the Isle of Wight, or the comparative hotbeds of Devonshire and Cornwall? Would not even "FAIR PLAY" be induced to give more just consideration to the efforts of his gardener, and his mode of cropping too, when, without clearing large breadths of ground at a time, he yet, by successive cropping, kept his table almost as well supplied from a small piece of ground, as it could be from Covent Garden, that obtains its supplies, not from parishes, nor even counties, but from kingdoms? A sufficiently continuous supply, but not enough to go to waste, must be the aim of the gentleman's gardener; and this he can only obtain by a numberless succession of crops, and that, too, by frequently cropping more closely than even market-gardeners.

3. *Covent Garden as a standard of value.*—It is rather a singular circumstance, that though I have met with many gentlemen, whom it pleased to speak of their garden as an expensive hobby or plaything, and who could expatiate on the cheapness and economy with which an establishment could be supplied in the London season, from Covent Garden—so cheap that it was not worth while to have things sent from the country—yet I have never known of an instance, in which a season's trial did not lead to different practical conclusions, and the honouring of the country garden, if at all within reasonable distance, as the medium for metropolitan supply. Covent Garden, with its prices, is no enemy to the gentleman's gardener. I have known gentlemen eat their new Potatoes in April, and their dishes of Strawberries in March and April, purely as a matter of course, just as they would do in June; that looked upon their gardener rather differently, after giving a London party in the beginning of April, and paying 3s. per pound for Potatoes, 2s. 6d. per ounce for a pound of Strawberries, 3s. for a hundred of Beans, 3s. for a Cucumber, other things in proportion, and next to their weight in gold for some choice bouquets, that he had previously thought would be worth so much copper, or a little silver at farthest. Much mutual annoyance to employer and employed would be removed, were it thoroughly comprehended, that mere high keeping, neatness, trimness, well rolled, comfortable walks, and smooth, carpet lawns, cannot be estimated by money value, except by a strict account of the latter, &c., employed. All who are so unhappily constituted, as to receive no real value for their outlay, from the pleasure of beholding and enjoying such things, should just come to the conclusion entirely to dispense with them; if they wish to draw a comparison between the money value of the products of their garden, as tested by the London market. It is evident, that neither "ECONOMICUS," nor "LOOK SHARP," nor, probably, "FAIR PLAY," have been gifted with a love of flowers; and, therefore, why should they have them, unless they can turn them into money. Perhaps that consideration might create an interest. I recollect a case, where a gentleman in the country merely tolerated flowers because he saw his gardener was fond of them. He never imagined they could be worth anything to anybody. He, however, got cured of that idea. He took a house in

London for three months. A little closet, nearly all fronted with glass, abutted on the principal sitting-room; and, to be in the fashion, that little place was supplied with flowering plants for about nine weeks, by a neighbouring nurseryman; and the bill, which, after due examination, was found to be reasonable and proper, was over fifty pounds. His "loves for the flowers" might remain as before, but he was forced to admit that they possessed even a money value.

Taking Covent Garden prices as a standard of value, even in connection with the principle, that "the value of a thing is just the money it will bring," will not prevent gardeners and their employers debating as to the value to be agreed upon. It is well known that selling and buying are very different transactions. The gentleman who buys a rarity at Covent Garden, need not expect that his gardener will receive anything like that amount when he sells. Hence he is apt to contend, that the estimated value of a certain thing in his own garden, ought just to be what his gardener can get for it from another person, or from the public market salesman. The gardener, on the other hand, argues that his employer ought to allow what he would have to pay if he went to purchase. Considering that the employer must have some payment or return, in the way of pleasure, in looking at his things, I incline to agree with the gardener; but, perhaps, strict justice would require a medium regulation in the way of compromise.

I regret I cannot give such definite answers to "PRO BONO PUBLICO," as I would wish, and expected to do; as I have had little opportunity of noticing such matters for a number of years. With full opportunity, however, I could give no more than a general approximation; as even the prices in London depend on the weather, the prevalence of parties, &c., or in other words, the demand and the supply. With one general exception, however, to which I will presently allude, it may be laid down as a rule, that the value of ice, of which he speaks, and the value of flowers, and other garden produce, will be in an inverse ratio to each other; the ice being dearest in the finest weather in summer, and the produce of the garden then the cheapest. For instance, in winter, and the early spring months, 5s. per cwt. would be an average price for rough, common ice, and 1s., or 1s. 6d., more for block ice, such as that now brought in such quantities from the American Lakes. We should expect to pay much more in July and August—in very hot weather. On the other hand, the earlier vegetables, fruits, and flowers are obtained, the more valuable they are. We do not know the size of the small basket referred to. A friend of ours sends a box frequently to Covent Garden—say, 2 feet long, 1 foot wide, and 8 or 10 inches deep—firmly packed with such flowers as those alluded to, and perhaps a few Pinks, and some trusses of Stephanotis; and after defraying carriage, &c., the dealers generally allow from 25s. to 30s. Of course, a gentleman purchasing would have to pay more than the double of that money; as florists must live, and pay rates and taxes, and find skill and taste for the making the most of flowers after they obtain them. When I used to be about London, flower dealers used to give to nurserymen and growers about 12s. per dozen for Camellia blooms, for rather more than three months of the year. Good Roses would bring as much, and so would a truss of Stephanotis bloom, and Heaths and Azaleas in proportion. As the days lengthened, the value of the flowers decreased. Our friend, who sent fine Rose buds, and Cloves, and Pinks, and Carnations, and some extras from the stove, in the shape of Passion Flowers, &c., in June and July, could not obtain more than half of that allowed in March and April.

The exception to which I have alluded, and in which Covent Garden ceases to be a criterion of value to garden produce in the country, is in the winter months. At that period there is a want of rarities in the market, because there is a want of purchasers. If the market prices of such things are quoted at all, it is generally at a lower figure than that for which they could be produced, and the regular market-gardener never thinks of such a thing. Ladies and gentlemen, who will have forced flowers and vegetables in winter and spring, must not grumble at expense, nor keep referring to Covent Garden prices. A bunch of Neapolitan Violets, is intrinsically more valuable in December than in March; but will it bring the same amount of money? You may look to market reports, and find no trace of Asparagus in November and December, and perceive a next to fabulous price against it in February; and yet who does not know, that to the consumer, who will have it, it ought to be more costly in the former case than the latter. Some people will have French Beans all the winter months, Cucumbers every day, and Strawberries as soon after the new year as possible. Who ever saw these quoted at remunerating prices, before the gentry returned from the country to London; though every gardener knows it requires more cost, and skill, and labour, to produce these things before February than after. A shilling for a brace of cucumbers at Christmas, and 5s. for a brace in March or April! Why, who would grow the cold, unhealthy things in winter, except at the command of those who could, and did not grumble, to pay the real cost.

A few more thoughts are suggested, but I must stop for the present.

R. FISH.

NOTES FROM THE CONTINENT—No. 24.

COLOGNE.

THE day following my visit to Herrenhausen, I was on my way to Cologne, but found it necessary to remain for ten hours at an intermediate station—Minden. I had no particular business in this picturesque old town, and, therefore, thought of devoting the time to gardening matters, but, unfortunately, there was nothing worthy of notice. North of the town a good deal of ground is laid out in the way of allotment gardens, and appeared to be under good management. As there was nothing else in the horticultural line, I was obliged to fall back upon the examination of the architectural features of the town, and the scenery of the neighbourhood. About two miles from the town, westward, is a romantic pass in the mountains (Wichengebirge), called "Porta Westphalica," or the Gates of Westphalia. Through this gigantic doorway, the river Weser, and the railway, obtain admission to the level plain beyond.

Travelling by night train, I found myself early in the morning at Dentz, with the glorious Rhine flowing in front of me, and Cologne, the beautiful, spreading itself along the opposite bank. Crossing by the bridge of boats (upwards of 1,400 feet long), I made my way along the left bank of the river, to the cluster of villas beyond the city. In one of these lives the banker Oppenheim, an enthusiastic gentleman, who spends a great deal of money upon his garden. Though small, it is laid out with the utmost taste, and is a perfect model of what such a garden should be. It contains a large conservatory, or show house, kept gay throughout the year with florists' flowers, and the customary greenhouse plants. I noticed that the best and newest English varieties were grown here, and well they repaid the attention bestowed upon them by the intelligent gardener, Herr Mashmeyer. The *Victoria* was formerly grown here in a circular house, flanked by a stove on either side; but its cultivation has been given up, the three houses thrown into one, and at the time of my visit, the whole was undergoing arrangement upon a new plan. It was the intention of the gardener to carry a winding walk from end to end of the building, between masses of rockwork, and over a rustic bridge in the centre. He would then grow

Nymphæas, &c., in the pool of water, and Palms, Ferns, and Orchidaceous plants among the rock and root-work, introducing Begonias, Achemenes, and other free-flowering things between them, to add the charm of colour to that of form possessed by the foliage of the others. I fear the effect will not be good: such an idea cannot be well carried out upon so limited a scale. The flower garden looked well, with its fountains and marble statuary; near it was the Rosary, with a selection of the best and hardiest Roses. A new kitchen garden has lately been added, and in it is a good range of lean-to forcing houses, heated with hot water, and containing every convenience.

There is another garden in Cologne (that of Herr Engels) worthy of a visit, if it was only to see the singular arrangement of the conservatory. This is in the style of the Alhambra Court of the Crystal Palace, but far more eccentric, and quite unfitted for its purpose. The walls, gallery, and roof, are as brightly gilded, and as flauntingly coloured; curious gaudily-painted lamps hang from above; and from eaves in the rockwork below, and from the water of the fountain, carved dragons and other monsters stare out at you. A more appropriate and pleasing feature is contributed by the real birds, which are plentifully introduced; some of them charming us by their voice, others by the brilliant colour of their plumage. Plants form only a secondary feature in this strange eccentric building; most of them are only introduced when in flower, but a few Palms and Ferns, which are constant residents, appeared in good health.

I visited several of the best nurseries in the city, but found them to be only second-rate, small, containing no great stock of any kind, and nothing new. Most of the fruit trees sold in them, I found, were imported from Holland.—KARL.

DRONE GRUBS IN QUEEN'S CELLS.

OF all the experiments I have ever wrought with bees—and these have been neither few nor seldom—that of putting male grubs into royal cells has hitherto given the greatest amount of trouble, and been accompanied with no satisfactory result. I have, indeed, not confined myself to grubs; I have even tried eggs.

It is, however, a very nice operation to remove either without injury; and I have found this so difficult to do, that I had given up the idea as worthless, and resolved to trouble myself no more about it. Guess, then, the gratification I experienced, when I read in your report of the Entomological Society's meeting, that the same thing had been done by others in my own country.

Can you, or any of your readers, give me any further information about it? Where this was done—by whom it was done—and what was the result? These sort of things are, to me, exceedingly interesting; and I would at any time forego the chance of obtaining the greatest quantity of honey ever gathered by a single hive, for the sake of making one really good experiment.

My own opinion as to what the result of this experiment would be is against the notion that a queen would be the fruit; and this opinion is drawn from an experiment which may be briefly stated. I have repeatedly placed in an empty box, made for the purpose, a piece of comb, consisting of drone cells only, these containing eggs and grubs. A sufficient number of bees were then put in beside the comb, and in no case was there ever the appearance of an attempt having been made to raise a queen.

When next I make a similar experiment, I intend giving them, after two or three days, a piece of worker comb similarly replenished, and the result shall be communicated.—D. G. M'LELLAN, *Rutherglen*.

PLANTING A QUICKSET HEDGE.

COMMON as this work is, every one is not equally successful in obtaining a good fence in a short time. Preparing the ground, and planting early in the season, and not letting the plants be about in the cold drying winds, or pinching frosts, is advice every one thinks himself entitled to give; but some, who do so, will also tell you to cut them down at

the time of planting. This advice, I have no hesitation in saying, is bad, and around here is seldom acted upon. Cutting down the next year is done instead, after the plant has got established, and the growth then is robust and sturdy. But I noticed a method of planting a short time ago, which took my fancy, as being a good one. The young quickset plants, whose tops were about eighteen inches long or so, were bent over in such a way, that the tips of each were fastened in the ground again, in the row near to its neighbouring plant. This had much the appearance of an old quickset hedge *plashed and laid*, as the local term will have it, and no cutting down was required, as there seemed plenty of upright shoots from the upper side of each row. The planting in this way will not be so quickly done, but a little practice will enable any one to do it tolerably fast, and the result in the formation of the hedge will be highly satisfactory. —J. ROBSON.

QUERIES AND ANSWERS.

BRITISH QUEEN STRAWBERRY—SUCCESSIONAL EDGINGS.

"In my garden, and in many of those around me, we have the different sorts of Strawberries, which all bear well except the *British Queen*, which makes a quantity of leaves of great length, but there is little fruit, and that not in perfection. Will you tell me how to remedy this? My soil is very light and unfertile.

"Will you tell me of any early-flowering spring plants, such as *Arabis alpina* and *Primula cortusoides*, which will move immediately after flowering, to be replaced in the following autumn?"—A SUBSCRIBER.

[The *British Queen* Strawberry will not grow well on many light soils, particularly chalky soil. On your light soil it goes to leaf, and does not fruit. The only true way, in all such cases, is either to change the soil, or change the kind of fruit.

Doronicum Austriacum is the next earliest spring flower of the *Arabis alpina*; but *Aubrietia purpurea* would be a better neighbour to *Primula cortusoides*. What a pity that such correspondents should not tell what part of the kingdom they write from. *Primula cortusoides* would be a welcome spring flower in many gardens; but how far north will it do well out of doors in winter?]

MANAGEMENT OF RICHARDIA (CALLA) ÆTHIOPICA.

"I have a fine plant of the *Calla Æthiopica*, but some of the leaves have, for some time past, faded on the edges, and one or two leaves have faded entirely. What is the cause of this?

"The blossoms, two in number, are now going off. Should the plant be watered to the same extent as when the flowers were opening? Also, what is the best time of year for dividing the root, and what is the best soil for potting?"—C. B.

[The cause of the leaves of your *Calla* fading is, that they are ripening and preparing to fall off. The plants will not require more than one-half of the usual quantity of water, after the edges of the leaves indicate ripeness, till they get blotchy with yellow; and after that, no more water. When the balls get dry, after the fall of the leaf, whether that be in the autumn, or in the spring, is the proper time to shake all the soil from the roots, so as to get numbers of them for young plants.

The best soil for flowering roots of this *Calla*, is the very best loam in the parish, and nothing else; and, for younger roots, add a small portion of sand to the best loam; but the plant is so accommodating, that it will grow in all kinds of soils, if it has abundance of water while it is growing.]

BOXES FOR ROOTED CUTTINGS—SOIL FOR INDIA-RUBBER PLANT.

"In printing my last note, you requested me to send a statement of some alterations, which I thought improvements, upon the plant boxes, suggested by another correspondent, as the receptacle for rooted cuttings.

"They consist, first, in substituting a plain, flat tile, ten inches and a half by six inches and a half, for the slate at bottom; because, I should think, the warm, rough tile offers a surface more genial to the roots than that afforded by the other material; while the size is more portable, and the expense less, as tiles cost but 3s. 6d. per hundred.

"Secondly. In preventing accidents, which would probably arise from the abrupt disappearance of the bottom of the box, which, in our friend's plan, was totally unsecured, and might be detached in a moment by a slip, or by forgetful handling of the machine by people accustomed to the use of pots and pans with fixed bottoms. This security I effected by making my oblong wooden frame large enough to fit my tile *outside*, with a quarter of an inch over, both in length and breadth; and then tacking small pieces of wood as stops or ledges, on the inside of the wooden frame at, or near, the bottom; the tile, when dropped *into* the wooden box, or frame, rested thereon, and could not fall through; though, of course, it could be easily pushed up, with all its earth and plants upon it, through the frame, when bedding-out time came.

"Thirdly. To obtain drainage, which seemed to me deficient the other way, I placed the stops, which received the tile, half an inch higher at one end of the box than at the other; and laid small crooks over the space left, all round, between the tile and the wood, by the latter being made, as I said before, each way a quarter of an inch larger than the tile.

"Boxes of this shape have a great advantage over pots and pans, in that they stow so much more closely on a shelf, or in a frame. I have had made, and find most useful, some *square* seed pans; they economised space admirably during the winter on the shelves of my diminutive greenhouse, as the receptacles of my autumn cuttings.

"Having very nearly concluded my sand-and-water operations for the season, I may mention that, of about 600 *Verbenas* and 120 *Chrysanthemums*, only twelve of the former and two of the latter have not made good roots; and of eighteen *Fuchsias*, two have similarly failed; but these sixteen plants, though not struck, were quite vigorous, and would, doubtless, root in a week, did I want them. I have not one weedy plant from those thus rooted, and potted out; but all are small: this, I suppose, is because I began late (the 26th March). Since potting off, two *Verbenas* died (in the wooden plant box), and two *Chrysanthemums*.

"Allow me to remind you of my two queries—Why the treatment, which suited *Verbenas*, *Petunias*, *Anagallis*, *Chrysanthemums*, *Fuchsias*, and, I may now add, *Gaillardias*, should not answer with *Calceolarias* and *Heliotropes*; and, also, as to the proper pot soil for the India-rubber plant? I do not find peat or leaf mould, separate or together, suit mine."—A GREEN HAND.

[The moveable bottom in these square boxes will be found very handy for amateurs. Large pots have long been in use for specimen plants on the same plan—a moveable bottom made of wood. An upright, blunt spur, on the end of the potting bench, pushes up the false bottom with the ball entire. A similar contrivance could be used for these boxes; and we should prefer them all of wood, with holes in the bottom, and all the inside tarred, and painted outside. Mr. Beaton tells us, he keeps his best seedlings over the winter in shallow wooden boxes, which are thus tarred, but not painted. He finds the commonest Scotch Fir boxes will last seven years, "as good as new," with a coat of tar once in two years.

The probable reason why *Calceolaria* and *Heliotrope* cuttings did not answer in the sand and water, was the late period they were put in. The flowering wood was made into cuttings, and that always takes longer time; and some cuttings will hardly root when the plant is on the point of flowering. The soil is not to blame with your *India-rubber plant*, but it is injured by being kept in air too dry and too cold for it. It will grow very well in the soil for scarlet *Geraniums*. Any good kitchen-garden soil, which would answer for early Cabbages, would do for the India-rubber plant.]

PATCHY GRASS PLOT.

"The grass plot in my garden has been very thin and patchy for a year or two; it is now becoming almost bare. I believe it to be from wireworm, as a good many come to the surface if

anything is laid upon it. Is there any remedy? If I have to relay it with turf, how can I get rid of them out of the ground?"—C. W.

[Late in May is the very worst time of the whole year to repair a patchy lawn. We never knew the wireworm to hurt a blade of grass, or an inch of lawn. We remember to have used the turf of a most luxuriant piece of meadow for a bed of globe-flowered Dahlias, which were new in 1830; that turf was absolutely swarming with wireworm, and they killed every one of nineteen good globes, and every thing we put in the bed, in 1831. We turned the whole back to the meadow, and sowed grass, where we took the turf from; but not a blade of the young grass, or of the old grass, did they hurt for ten long years. A nasty soft, whitish, fat-looking grub, with a dark head, is the fellow who devours the lawns in the dead of the night; and for one or two years, about forty years back, it was like the plague in Egypt in the north of Scotland; and the way they got rid of it was by rolling the fields in the dead of the night, when the grub was feeding. Gardeners keep them down by lime-water; but old Douglass's receipt for killing worms is the most effectual: to put a piece of corrosive sublimate, of the size of a Hazel-nut, into an eighteen-gallon cask of lime-water, and to water the grass heavily with it with a rose watering-pot; but it should be carefully handled, as it is a strong poison. Your best plan will be to returf your lawn in the autumn, after digging the present surface, and if you see it grubby, give the soil a good soaking of the mixture. Dig six inches deep, and rake the stones and lumps into the trench as the digging proceeds. Patchy lawns should never be relaid with turf without digging under it.]

BLOOMING BRUGMANSIA ARBOREA.

"Having a plant of this, the old *Datura*, I should be obliged for information to flower it in the coming season. The plant is not large, only one stem, and is three years old; has been rather neglected in pot room; is now pushing in growth at every bud; is two feet high; has, since I have had it, been shifted into an eight-inch pot, in good rich soil. How many branches shall I leave on the plant for growth?

"My object is to grow a plant as dwarf as I can, say not over three feet, and to flower it yearly."—M. F.

[Your flowering it this season will greatly depend on the ripeness of the shoot the plant now has. As you wish it to be low, select about four of the best shoots starting from the buds, ranging from the base to half the height of the stem. Slip off all the other buds, or shoots, by degrees—say in the course of a week. This will throw more strength into those left. Keep in a growing heat, not lower than 50° to 55°, at this season. Supply, when rooting is progressing, with rich manure waterings; and, in a month or six weeks, transfer to a larger pot, in rich stiffish loam, and treat as before, or plant it in similar material out of doors. If the shoot was pretty well hardened last autumn, the young shoots of this season's growth will produce plenty of flowers, otherwise they will not bloom freely. Next season, prune back, and it will do the same again; only you must try and give it a foot or two more top room, it grows so fast.]

VINE LEAVES SCORCHING.

"In a small foreing-house, the leaves of the Vines have become much scorched: they were the largest and best leaves. I should have supposed this was caused by the house becoming too dry. I tried, however, to keep it damp by sprinkling water, &c., on the floors. Could it have been from too much sun. I use the very large panes, and I observe some gardeners shade the glass; I have done this, and, whether owing to this or not, there has certainly been no scorching since. I had thought the great object of the large panes, was to secure as much light and sun as possible; and, if not, what is the advantage over smaller panes.

"I cut off all the leaves that were scorched: did I do right; will it affect the wood for next year? Some of the bunches of Grapes were much injured and destroyed; but most of them had plenty of leaves above, as very close stopping had

not been, fortunately, resorted to, and will, I hope, ripen. The largest leaves having perished, I fear this will be a loss to the Vines, which are young."—G.

[The advantage of large squares, is the greater amount of light. Sometimes the glass is so full of dots, that the heating rays are collected, and burning is the result. Without knowing more of your case, we presume, at present, that it was not want of moisture, but want of air and not giving it early enough, that proved the source of your misfortune. We should have removed merely the scorched part of the large leaves, and left the rest, until the small leaves became large at least. The affecting of the bunches, makes us think that the want of air-giving was your enemy. If the Vines grow freely, and the leaves are allowed to expand, you will not know much about the evil next year. There is yet plenty of time to thoroughly ripen the wood.]

CLIMBERS FOR COOL GREENHOUSE.

"Have the kindness to give a list of creepers which would be suitable for a conservatory, eighteen feet by thirteen feet, facing due south, heated by hot water. It is not intended to do more than to keep out frost. No Vines are to be admitted. Would the *Lapageria rosea* thrive? If so, should it be planted against the back wall, or against the glass front of the building? Of course the roots to be in an inside bed. There will be four rafters, and sashes to slide up and down. The entrance to be, into the garden from the centre of the front, into a drawing-room from the centre of the back wall. What creepers, and how many, would be best to fill the roof and back wall? Fragrance, of course, a merit, and permanence of bloom."—TYRO.

[The *Lapageria* will do in the front, if you can manage it as detailed by Mr. Beaton in a late volume. Failing *Lapageria*, and supposing you had six climbers, one at each end, and one at each rafter, then the following would do:—1 *Passiflora carulea*, at one end. 1 *P. racemosa-carulea*, at the other. 1 *Mandevilla suaveolens*. 1 *Kennedya Marryatta*. 1 *Habrothamnus elegans*. The back wall to be covered with *Acacia armata*, or Oranges, or Camellias, or a mixture.]

STOPPING PLUM TREE SHOOT.

"My Plum trees are putting forth a series of small side-shoots, on their various branches, for which I have no room on the wall. I am told that, at this season of the year, I should pinch them off, and that this will induce fruit-buds, which at present they sadly lack. Will you kindly inform me, in your next publication, whether this is the correct method? and, if so, should it be continued during the summer? and at what joint they should be pinched off?"—A VERITABLE GREENHORN.

[The side-shoots, or last year's shoots, if small, should not yet be meddled with, but merely have the points nipped out a month or two hence. They will then form fruitspurs at their base, for next year, if all is right, and may be shortened to within two or three inches in August. If this season's shoots, for which there is no room, are strong and rampant, and already from six to twelve inches in length, shorten the strongest, and merely nip out the point of the weaker ones. See late instructions by Mr. Errington.]

THOMSON'S GAS-HEATING APPARATUS.

Do you know anyone who has tried "Thomson's Gas-heating Apparatus," so strongly recommended and advertised by the inventor, for greenhouses?

I have had one, and after spending nearly £20 about it, money already paid (much more than hot-water pipes would have cost), besides destroying nearly all my plants, find it quite useless, and shall be compelled to have it all taken down, and incur, *de novo*, the inconvenience and expense of some other mode of heating, unless you can oblige me with the name of anyone who has succeeded with it, and can offer a suggestion how to fix mine with the chance of success, and at a trifling additional cost.

My endeavours to make the apparatus answer have been most patient, and I have not spared the slightest expense in trying to PERFECT the patent. Very kind, you will say!

When I bought the apparatus, I was led to expect that its expense would be very trifling, and its success certain.

That it should have resulted in so great an expense, and destruction of my plants, you can well imagine to be one of the greatest annoyances to one so fond of flowers as I am, and preparing them, as I intended, for show.

If you can assist me in this matter, I shall esteem it a favour.—WILL. WORTH, *Burnt Ash Villas, Lee, Kent.*

[We do not know the apparatus, nor any one that does. No gas-heating is secure from injuring plants, unless there is an ample arrangement for carrying all the results from the burnt gas into the open air.—ED.]

BEES AND COCOONS.

IN these days of inquiry, when so much has been written on bees, one might expect to find old errors corrected in new editions; some of them, however, still appear. For instance, in the fourth edition of an excellent book, lately published, is the following:—"The *larvæ* then assume the nymph, or pupa form, and spin themselves a film, or cocoon, the nurses immediately after sealing them up with a substance which Huber calls wax." This is backed by the following note:—"See 'Observations on Natural History of Bees, by Francis Huber,' new edition, London, 1841. An invaluable work to the scientific apiarian." It requires but a slight acquaintance with entomology to know, that it is the grub which spins cocoons, and not the chrysalis; this having but little power of motion. We may note that, perhaps it is only soft chrysalises that are protected by cocoons; also that the *larvæ* of all insects that are bred in combs, like those of bees, have none, the cells affording sufficient protection.

As this is rather an important matter, being connected with the general belief of even some of our best apiarians, namely, that the coatings of the cells are the cocoons spun and left by the insects, what we have said may be doubted. We, however, further reply, as we once did to Dr. Bevan, whose name every bee-keeper should respect, on this subject. How can the *larvæ* of bees, which are so tight in the cells, having power only to move their heads, turn, and spin round themselves! To say more would be superfluous, except that the *larvæ* of bees, like those of wasps and hornets, close the mouths of their cells with a thread-like substance, before they assume the pupa form, and are sealed up by the bees with a waxy mixture, in the same manner as those of humble bees. We give this, however, with some diffidence; for we never observed the *larvæ* of bees in the act of closing their cells; though we have often seen those of wasps and hornets. We may note, that these do not cease from their operations, even when their combs are in one's hand, while the brood of bees are more sensitive of cold; likewise, that the former make a crackling sound, caused by the motion of their heads on the edges of the pupa cells. The fact, that those of bees are of wax, may account for no such noise being heard in a beehive.—J. WIGHTON.

PIPES INSTEAD OF BRICK FLUES.

IN your number of April 27th, a correspondent, "W. O. D." in speaking of flue pipes and brick flues, seems to recommend flues near fireplaces, because of the pipes cracking. I do not wonder at all at his failure. If "W. O. D." had procured from some pipemaker some unglazed fire-clay pipes, made on purpose, he would never have complained of the pipes cracking. I have made some, which have been in use for some time in a manufactory, and have kept a large building, say ninety feet by thirty feet, and fifteen feet high, at a temperature of 70° during frost, with only ninety feet of eight-inch bore pipe, made of fire clay one inch and a half thick; and I have never found them to crack, without they are allowed to get to red heat; then, of course, the expansion on the inside is great, and the cold air in the building prevents the outside to expand in the same degree; but for the purpose of a

greenhouse, or hothouse, well made fire-clay pipes will never crack, and they retain the heat so very long, which is another great advantage over any other. The best cement to make the joints with is well-beaten mortar, with very little sand in it.—H. L. E.

TO CORRESPONDENTS.

PAINTED POTS (H. S.).—Gardeners long thought that painted, or hard-burnt, pots were detrimental to plants. Of course, you mean painted outside—not inside. We do not now think that they are at all injurious, provided that drainage and a suitable compost are attended to. Buds fall from Fuchsias from two opposite causes—decaying and unhealthy roots, amid nasty sour, morass-like, undrained soil; and from the soil and roots being too dry, though half an inch of the surface soil may be wet enough. Ring the pot with your knuckles: if it emits a very dull, heavy sound, it is too wet, and wants drainage; if a clear sound, it is too dry.

GRUBS AT STRAWBERRY ROOTS (T. G. D.).—We know of no remedy except scraping the earth away from round the stools, and destroying any marander found there.

SUPER-PHOSPHATE OF LIME (V. M.).—This may be used beneficially as a liquid manure in the kitchen and flower gardens. One pound to ten gallons will be strong enough.

BEES (K. P.).—Buy the kind of hive you prefer, and get the keeper of bees nearest to you to put a May swarm into it. Ten shillings is the usual price for a swarm.

NAMES OF PLANTS (B. S.).—Your plants are as follow:—1. *Cistus ladaniferus*. 2. *Euonymus verrucosus*. 3. *Myosotis Azorica*. 4. *Lonicera tartarica*, var. *rubra*. 5. *Cupressus*, in the way of *Goveniana*; but we are not quite certain from the small bit sent. 6. *Metrosideros saligna*. (I. N.).—*Halesia tetraptera*, or Snowdrop Tree. (J. T. Sinclair).—The seed is of *Tagetes patula*, or French Marigold; the plant accompanying it is *Cineraria amelloides*, a hardy greenhouse plant, much used now for bedding. (A Young Hand at Ferns).—1. *Polypodium vulgare*, true, and not the variety *serratum*. 2. *Asplenium Adiantum-nigrum*. 3. *Ceterach officinarum*. (S. J. S.).—*Tillandsia stricta*, a rather rare stove plant.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

- MAY 26th, 27th, and 28th. BIRMINGHAM (SUMMER). Secs., Messrs. Titterton and Cattell, 26, Worcester Street. Entries close May 10th.
- JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, Hammet Street, Taunton.
- JUNE 9th and 10th. BEVERLEY AND EAST RIDING OF YORKSHIRE. Sec., W. W. Boulton, Beverley, Yorkshire. Entries close on the 1st of June.
- JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. Sec., Wm. Henry Dawson, Sheffield.
- JULY 8th. PRESCOT. Sec., Mr. James Beesley.
- AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.
- AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth, Shipley.
- OCTOBER 7th and 8th. WORCESTERSHIRE. Sec., Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.
- NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.
- DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.
- JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.
- N.B.—Secretaries will oblige us by sending early copies of their lists.

OLLA PODRIDA.

WE have observed, that hens lay smaller eggs in cold weather than in hot. Will some one please to tell us why it is.

Are the red worms, that cause the gapes in chickens, identical with those that are found in stagnant water, especially such as remain at the bottoms of butts and tubs? Will some of our amateurs, who have the opportunity of microscopic examination, give our readers the result of a leisure half-hour.

Who, that has been in the habit of looking over the advertisements in the *Times* and other papers, has not admired the pertinacity with which Mary Wedlake adhered to the important question, "Do you bruise your oats yet?" We ask again and again, "Do you still over-feed your fowls?" You say you do not; we say you do, and, we assure you, you will be gainers every way, if you reduce the food given by one-third. We could name a hundred cures, as wonderful as those performed on the Earl of Aldborough, and the Rajah of Travancore, by Holloway's Pills and Ointment; and, in each case, the

suffering hen was restored to health by the free use of castor oil, and almost total deprivation of any *other* food. Her only disease was over-feeding.

In the *Times*, we read an interesting account of the death of a young hippopotamus in some of the public gardens of Paris, we believe the *Jardin des Plantes*. Its birth is somewhat obscurely described. It suddenly appeared in the water of a tank, used by its parent as a bath. Now, as the *artiste en bains* had never contemplated such an interesting event, he had not arranged a proper landing-place or exit for the illustrious stranger. The parent was, no doubt, very anxious, and that made her clumsy. Her efforts to teach the young idea to land, were of such a nature, that she saved it from drowning by poking it to death. Doubtless, tears, such as hippopotami shed, were plentiful, and the great journal of Europe has recorded the whole transaction. We were speaking of it to a friend of ours, a great poultry-fancier; and she immediately said, "Ah! poor little monster, just like my chickens; they all die in the shell, *they can't get out*." Now this is a very common complaint at this time of year. Chickens are said to be so weak, they can't leave the shell. It is not so; the inner membrane of the shell is so hard and dry, the poor things are imprisoned in it. The fault is not with nature, but ourselves. If the hen stole her nest in some hedge, she would be lost till she brought her chickens out. She would only leave her charge at break of day: the grass at that time is wet with dew: and, when she had wandered in search of food for half-an-hour, she would return to her nest draggled with wet, but she would bring off her chickens: *they* would not die in the shell. Pheasants, Partridges, and Wild Ducks all do this.

But, in our anxiety to guard against accidents, or the possibility of failure, we confine our sitting hens, and we are careful to place food and water within reach, that they may have no temptation to remain long off their nests. Take a leaf out of Nature's book, wet the eggs for seven or eight days before hatching, and your chickens will come out.

We hope some of those who have been so hard on the sellers of eggs will feel compunction, when they find the various causes explained that may cause failure in hatching, and that the seller is often no more to blame for it than the architect of the bath was for the death of the juvenile hippopotamus. If not, we are sorry for them. As our friend Sairey Gamp would say, "What they ses, they knows, and what they knows, they 'll stick to; and if the expogure has done nothing else, it has taught people things as they didn't know afore." And as Mrs. Harris said, only last Friday as ever was, "Sairey," says she, "nobody never knows too much of nothing."

SAFETY IN PRE-PAYMENT—PACKING EGGS.

I WAS glad to see, by THE COTTAGE GARDENER for May 4, that Mr. Robson sued Mr. Cottrell for the price of his ducks. Mr. Cottrell attempted to victimise me, but, I am thankful to say, did not succeed, owing to my requesting pre-payment.

With regard to the question of bought eggs, now under discussion, I think many losses may be explained by the careless way in which many eggs are packed. I have received eggs packed in bran, which did not near fill the box, and also in the same way in chaff.—F. G. DUTTON, *Lydeard House, Swindon*.

NOTE ON THE AUSTRALIAN BRONZE-WINGED DOVE.

MR. G. C. ADKINS, in reply to my inquiries, says he has kept these birds, and states they lay occasionally, though not often; but they have never hatched a young one. They are not sufficiently domesticated to be allowed their liberty; nor, as far as his experience goes, are they likely to become so. They always hold themselves aloof from the other birds in the same pen; and the odd ones never show the slightest disposition to pair with those of a different species.—B. P. BRENT.

REARING NIGHTINGALES.

OBSERVING, in THE COTTAGE GARDENER of May the 4th, a notice on "Rearing the Nightingale and Thrush," signed "RURIS AMATOR," I beg to say a few words on the subject. I would premise that, although neither the Nightingale nor Thrush belong to that tribe denominated "mocking birds"—for they invariably adhere to their natural song, when brought up from the nest, no matter however secluded they may be—nevertheless, their strain is always inferior to that of birds of the same kind when reclaimed from a state of nature. It is deficient in that wild, startling tone, that arrests the ear on a still summer's evening in the woods. It is insipid in comparison. Besides, the nestling nightingale, in particular, rarely arrives at perfection in the full quantity of his cadences;—some of them are missing. Having proceeded thus far, I do not see the advantage of taking the trouble—for a great trouble it certainly is—to bring up young birds of the above description from the nest; when they are so easily "meated off," when caught in full maturity, and stout in song. I would not advise any fancier to give his birds live food, when they are accustomed to artificial food; for they do not require it, except, indeed, when they appear dull, and refuse their usual meat; then a mealworm, or spider, will prove very beneficial. The "meating off" of caught birds is too well understood, I should imagine, for me to offer a description of the process. I had a nightingale caged four years, and during that period he never had any live food, except some house-flies that were occasionally attracted to his cage by the smell of the raw meat. He was very expert in capturing them when they alighted on the wires of his cage.

The best food I ever found for all soft-billed birds is the following mixture:—boiled bullock's liver, grated fine; chopped egg, crushed hempseed, and grated crumb of stale white bread: the nightingale should have, also, in another pan, scraped raw beef and the yolk of an egg, beat up together and moistened with water: it must be *fresh*, as "RURIS AMATOR" observes. I never could see any advantage in adding *boiled carrots* to the food. It is at the migratory season when the nightingale becomes restless in his cage; his instinct tells him his companions are departing to a warmer climate, where there is abundance of insects awaiting their arrival, and he is anxious to join them in their flight: a mealworm then may be very judiciously given. I never knew any of my birds to be restless in the spring; the autumn was the time.—WM. BRENT, No. 2, *Military Road, Canterbury*.

OUR LETTER BOX.

PIGEONS.—In reply to Mr. T. W. Wrench, I am sorry to say he has not minutely enough explained the marking of the Pigeons; but they may be a red variety of the Suabian Spangled. Though, from their being partly feather-footed, some having white, and others dark heads, and the flights being black and white intermixed, I expect them to be the produce of some mixture of one or more of the Spangled Pigeons, viz., Suabian Spangled, and Hyacinths, Poreclains, Victorias, or Ermines, as they are variously called.—B. P. BRENT.

PIGEONS (*Samuel Gilson, jun.*).—We cannot make out the variety from your description. We are always obliged by accounts of new kinds.

HENS PECKING OFF THE COCK'S HACKLE (*A Subscriber*).—The conduct of which you complain proves either a bad state of health in your fowls, or that they require some sort of change of diet that they cannot get. If they have been fed on meat, and it is now withheld, it is a hankering after it that makes them eat the cock's feathers. The end of the feather is, probably, soft and fleshy. If they are badly supplied with green food, it is a desire for a change that makes them eat them; they require something more than their usual diet, and, for want of it, they take the best substitute they can find. It is a habit they acquire one from the other. Remove the cock till the feathers are grown *hard* on the bare places. Give the hens a dose of castor oil each, and supply them liberally with green food.

LONDON MARKETS.—MAY 24TH.

POULTRY.

There is still a good supply and a good trade. The former is rather more plentiful than usual, and there is every appearance of a satisfactory season.

	Each.		Each.
Large Fowls ...	6s. 6d. to 7s. 6d.	Guinea Fowls .	0s. 0d. to 0s. 0d.
Small ditto.....	4 6 „ 5 6	Pigeons	0 8 „ 0 9
Chickens.....	3 0 „ 4 0	Leverets.....	2 6 „ 4 6
Goslings	6 0 „ 6 6	Rabbits	1 5 „ 1 6
Ducklings	3 6 „ 4 6	Wild ditto.....	0 9 „ 0 10

WEEKLY CALENDAR.

Day of Mth	Day of Week.	JUNE 1—7, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
1	Tu	Abelia floribunda.	30.009—29.947	69—40	E.	—	51 af 3	4 af 8	morn.	19	.....	152
2	W	Acacia grandis.	.....	.....	.....	—	50 3	5 8	4 af 0	20	2 24	153
3	Th	Acacia Drummondii.	.....	.....	.....	—	49 3	6 8	20 0	21	2 14	154
4	F	Adenadra fragrans.	.....	.....	.....	—	48 3	7 8	34 0	22	2 4	155
5	S	Adenadra amana.	30.080—29.988	91—54	S.W.	.02	48 3	8 8	45 0	23	1 54	156
6	SUN	1 SUNDAY AFTER TRINITY.	29.075—29.944	89—55	W.	.05	47 3	9 8	56 0	24	1 44	157
7	M	Adenadra uniflora.	30.783—29.588	79—51	S.E.	.20	47 3	10 8	8 1	25	1 33	158

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 69.6° and 46.7°, respectively. The greatest heat, 89°, occurred on the 6th, in 1844; and the lowest cold, 33°, on the 5th, in 1856. During the period 129 days were fine, and on 88 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of showery weather, to transplant and earth-up all crops that require it. When transplanting, the trowel to be used in preference to the dibber; as, with the latter, the roots are either left hollow or are crushed-up together and very much injured. As whatever is worth doing should be done well, they ought to be dug up, transplanted, and watered with the greatest care.

ASPARAGUS.—When gathering, be careful to thrust the knife straight down, close to each shoot, cutting it off just below the surface, in a slanting direction, downwards, to avoid other shoots, that frequently arise from the same root. Asparagus should not be cut until six inches above the surface.

BORECOLE.—Plant out some of the strongest plants for autumn and winter use; and prick out into beds the smaller plants, three or four inches apart.

BROAD BEANS.—Sow. Hoe between rows, and draw earth to the young crops. When in flower, top the most forward crops—the early *Mazagan* when about two feet, and the larger sorts when from two and a half to three and a half feet high.

BROCCOLI.—Sow the *Walcheren*; and prick out small seedling plants from the seed-beds, three or four inches apart.

BRUSSELS SPROUTS.—Plant out finally.

CABBAGES.—Sow the *Dwarf Curled German Greens*, and *Portugal*. Continue to plant out.

CAULIFLOWERS.—Sow for a late crop, and plant out some from the first sowing in the open ground.

CELERY.—Plant out in trenches; and prick out the young plants from the seed-bed, two or three inches apart, for future transplanting.

CUCUMBERS.—Impregnate, or set, the young fruit in blossom. Keep up the heat of the principal beds, if fine fruit is required. Plants on ridges to be pegged down as they advance in growth.

ENDIVE.—Make a small sowing.

KIDNEY BEANS (DWARF).—Sow a full crop.

LETTUCE.—Sow two or three sorts. The *Paris Cos* is a good summer one. Thin the main crops; and plant out at one foot apart; and tie up the leaves of early *Cos* for cabbaging.

ONIONS.—Thin; and, if wanted, transplant the thinnings; to be regularly watered, if the weather is dry, until they take fresh roothold.

PEAS.—Sow *Knight's Dwarf Marrow*. Continue to earth-up, and to stick the advancing crops. If the weather is dry, a good soaking of water will assist to fill the pods.

POTATOES.—Take the first favourable opportunity to hoe between, to loosen the earth, and to destroy weeds.

RADISHES.—Sow, of various sorts, for a succession.

RED BEET.—Thin to twelve inches apart.

SAGE, THYME, and other pot-herbs, are now easily

increased by slipping off the side-shoots, and planting them like a Box edging, in a shady situation.

SAVOYS.—Plant out some of the early sowing.

TOMATOES, if planted under a south wall, will require to be watered occasionally, and mulched with short litter; the shoots to be nailed and stopped as they advance in growth.

TURNIPS.—Sow. A portion of the seed to be steeped about six hours in water, and then mixed with the other portion not steeped. The plants will come up at different times, and there is, consequently, a better chance of the crop being saved from the fly.

VEGETABLE MARROW.—Plant out, if not done before.

FRUIT GARDEN.

APRICOTS.—Thin, and nail in the young wood.

CURRANTS, GOOSEBERRIES, and RASPBERRIES.—Cut away the weak shoots, and keep them free from suckers.

FIGS.—Thin, and regulate the shoots, and water at the roots in dry weather.

PEACHES and NECTARINES.—Thin, and nail in, leaving as little wood to be removed at the winter pruning as possible; and remove any vigorous, gross shoot, for, if suffered to remain, it will appropriate a great portion of the sap, at the expense of the weaker portions of the tree.

RASPBERRIES.—As they usually send up many more shoots than are ultimately required, the weakest should be removed.

STRAWBERRY BEDS.—Short grass, or clean straw, laid between the rows, will prevent evaporation, and the fruit from being splashed by heavy rain with dirt. To be liberally supplied with water in dry weather, until the fruit begins to colour, when it should be discontinued.

VINES.—Regulate their early growth, by removing the foreright and all the badly-placed shoots, retaining such as are furnished with young fruit, now appearing; and the strong, well-placed shoots, when about a foot, or sufficiently long, to be trained regularly to the wall. When nailing in shoots of fruit trees, they should never be crossed over each other; such crossing is both injurious to them and unsightly to the eye of taste.

FLOWER GARDEN.

The late change in the weather is most favourable for filling up the flower-garden beds, and clumps, intended for the summer and autumn display. A striking effect is produced by employing plants only of a decided colour—principally red, blue, and yellow. Stake and peg-down such plants as require it. Plants on raised beds, or mounds, are very effective; to be planted in small holes, saucer shape, to retain the waterings, or rains, which would otherwise run off, and leave the ground hard and caked, and most unfavourable for healthy growth. Fill up the beds by turning out the *Heliotropes*, *Ageratums*, and such other comparatively more tender plants.

AMERICAN PLANTS.—When the flowers of the *Rhododendrons* and *Azaleas* begin to fade, they should be cut off; removing, at the same time, the whole of the seed vessels, and all the stalk. By so doing, the energies of the plants, which would have been expended on the useless seed vessels, are directed to form blossom buds for another season.

ANNUALS.—Thin out, according to size; and sow a few of the best, to bloom late in the autumn.

BULBS, SPRING.—Take up as soon as the leaves are decayed. If taken up before their leaves are entirely withered, to be laid in by the roots in some shady place, until their leaves entirely cease to grow. Or, where they are allowed to remain in the borders, annuals may be sown by the side of them, to keep up a succession of flowers.

CARNATIONS and PICOTEES.—Continue to tie them up as they spindle, occasionally examining the knot, and easing it when required.

CHRYSANTHEMUMS.—Continue to increase by cuttings.

CUTTINGS.—*Alyssum saxatile*, *Arabis* of sorts, the double yellow, or any other good sort of *Wallflower*, and many such things, will now strike freely by cuttings, if they are stripped off from the old plants, and are firmly imbedded in any garden soil in a shady situation. The operation is similar to planting Box edging.

DAHLIAS.—Plant out in rich, well-dunged ground.

NEAPOLITAN VIOLETS.—Divide and transplant; and shade with a few boughs, until the plants are rooted.

PANSIES.—Continue to propagate and transplant seedlings, as they get large enough.

PINKS.—Propagate by pipings. The method is very simple, merely to pull the piping out of its socket, and to press it with the finger and thumb into any light soil, in a shady situation, in the open ground. On the north side of a hedge, or wall, is a good situation.

PITS and FRAMES.—When they are emptied of their bedding-out stock, they may still be kept in constant use for the nursing of *Balsams*, *Cockscombs*, and other choice annuals that are tender; also for *China* and other *Roses*, where they will grow freely, if shaded and properly attended to.

RANUNCULUSES.—A top dressing of very rotten cowdung will be beneficial.

ROSES.—Water regularly, and occasionally with manure water.

STOCKS and CHINA ASTERS.—Prick out for autumn display.

VERBENAS, and other trailing plants, peg down.

Attention to be given to the routine operations of cleaning and dressing the flower garden and pleasure ground, by hoeing and raking the borders, weeding, sweeping, and rolling the gravel, and mowing the grass. All litter and decayed parts of plants to be cleared away, straggling growths to be trimmed and regulated, and the flower-stems as they advance to be supported, or tied up, in a neat and regular manner.

WILLIAM KEANE.

CRYSTAL PALACE HORTICULTURAL SHOW.—MAY 22.

THIS was the best Show they have had at the Crystal Palace; that is to say, there were the best sized specimen plants, the best arrangement for "setting off" the flowers, and the best company to pay the best prices, that ever were paid in this country for the seeing and smelling of flowers, since Flower Shows have been "elevated into a principle" in England.

I recollect perfectly well when visitors had to pay for the one-guinea breakfast flower shows at the Chis-

wick Garden; but there was no real elevation then. I recollect Dr. Lindley telling us, fifteen Judges, that he had seen a person "dead drunk" stretched out on that table, round which we sat, from the "effects" of one of the said guinea bouts, and that person was in the English peerage; but I will not go quite so far as the Doctor, and say whether the person was a man or woman.

Upwards of 3000 persons paid their 7s. 6d. to see this Show, and more than 9000 were admitted by season-tickets to the Crystal Palace on the 22nd. Now, put Sir Joseph Paxton in one scale, and add five years to his weight, and put Dr. Lindley in the opposite scale, with the weight of twenty-eight years—to say nothing of the difference between half-price and 5s. at Chiswick, or between the two sums and the 7s. 6d. of last Saturday—and then get the register of all the May Meetings at Chiswick since that drunken "person" was upset, and the index of the scales will show the effects of the two systems on the gardening world, or Chatsworth against Chiswick. The one has been doctored to death, the other has been knighted. The "Shows" at the Crystal Palace have "taken," almost at the first start; and no matter how high the admission fee for one grand day in the season, the great folks are sure to go there to see the flowers and each other; and, as we all like to see the Queen and the nobility, it is perfectly just that we should pay as much to see them as for seeing the flowers. Therefore, the best way for the Crystal Palace authorities is, to have a half-guinea day once a year: that would square the account between the flowers and the aristocracy.

There were great improvements in the arrangements—in raising the awnings much higher than formerly; secondly, in raising a solid barrier on each side of the way, along the centre of the building, to hide the scenery of the Palace; thirdly, to place the stages for the plants against these barriers, instead of their being in the middle of the space as formerly; and fourthly, in making two resting-places for the visitors, one immediately on each side of the great transept. Those empty spaces were lined with covered seats on both sides of the way, each of them occupying about fifty yards of the nave; and that arrangement threw the extreme ends of the Flower Show up close to the crystal and bronze fountains. The fruit was staged across the great transept, immediately below the Handel orchestra. In advance of the fruit, and in the very centre of the Palace, was a large circular stand, fifty yards round, and rising in the form of a pyramid: it was completely occupied with collections of stove and greenhouse plants. In front of this great circle, across the transept, was a long, double block of stages, also for stove and greenhouse collections; and on both sides of the transept were also stages, the same way as in the north and south naves.

The *Roses* were, beyond comparison, the greatest triumphs of gardening skill, and the finest plants, yet exhibited. The *Pelargoniums* were uniformly good, except one collection, with no improvement on former exhibitions. They had reached the limits of size and training long since, and they can never give more bloom in the same space; therefore, the only direction in which *Pelargoniums* can be further pushed, is in the way of improved kinds and colours.

We had one decided novelty and improvement in colour this time, in a French kind, called *Eugene Duval*. The ground colour all over is a soft flush, of a mixture of lavender and crimson, which gives a unique purple tint; the edges of all the petals, and all round the petals, down to the eye, or centre, of the flower, are faintly indicated by an even and extremely narrow line of white, and the back petals are faintly darkened from their centre downwards. It is a decided hit, and

Eugene Duval will soon be the most favoured of all Pelargoniums with the ladies. *Sanspareil* is the next best that was there, and, indeed, *Sanspareil* is the best of all the spotted kinds.

There was a marked improvement in the less size of the stove and greenhouse plants and Azaleas; and two of the best judges in England of such plants, who were Judges there that day, told me not to lower my voice against the vulgarity which was introduced by Mrs. Lawrence and Dr. Lindley, against all the odds which could be brought against them, while Chiswick Garden stood without rivalship. *Fuchsias* were very good; herbaceous *Calceolarias* the same; Ferns and Lycopods better than the average run, because not so large as some few will have them. Fine-leaved plants not so good as usual. *Orchids* very even and very good. *Everlastings*, or *Helichrysums*, *alias* *Aphelexis*, very numerous, and magnificently bloomed; *Heaths* very good, good, and indifferent, and not at all even. *Cavendishii* and *Albertini* will soon be as big as Portugal Laurels.

Among the miscellaneous and odds and ends were some really very good things, and very few inferior plants; one *Farfugium grande*, and a great number of seedling Geraniums, but nothing out of the common among them. Among new plants were some valuable kinds, chiefly from Messrs. Veitch and Son, and the Judges were very liberal, by giving two first prizes to old plants in place of new ones. I booked six plants of one of the kinds, *Cupressus Lawsonii* and one of the next *Cyanophyllum magnificum*, in the volume before the last one of THE COTTAGE GARDENER. But it is downright good policy not to be, or not to appear to be, stingy, in these things, although critics cannot conscientiously pass off a plant as new, round London, if it was exhibited there the year before, because foreign amateurs and nurserymen scan our reports before they come to our markets.

The first prize, of £25, for a collection of twenty stove and greenhouse plants, was awarded to Mr. Whitebread, gardener to H. Colyer, Esq., Dartford, and I would disqualify Mr. Colyer and his gardener for bad spelling. It is going back, to give prizes to people who cannot spell the names of their own plants. The first plant over the prize card was spelt *Genesthyllis*, which was a double mistake; the plant was a *Heilaroma*, and the spelling ought to have been *Genetyllis*. I did not look farther for accuracy. The plants were splendid. *Dipladenia crassinoda*, the only one there; *Gompholobium barbigerum*, *Pultenaea stipularis*, *Eriostemons*, *Polygalas*, *Chorozemas*, *Erica Cavendishii* and *elegans*, *Ixora coccinea* and *Javanica*, *Azalea variegata* and *Conqueror*, *Allamanda cathartica*, *Pimelca Hendersonii*, *Acrophyllum venosum*, *Gompholobium polymorphum*, and *Epacris miniata*, were remarkably well bloomed.

The next prize, of £15, was given to Mr. Dods, gardener to Sir John Cathcart, Bart. *Azalea variegata*, in this collection, was the best bloomed plant at the Show; this is a Chinese seedling, which we have not yet been able to eclipse. Blue *Lechenaultia*, *Erica Cavendishii*, *tricolor*, *Wilsonii*, and *depressa*, *Pimelca spectabilis*, *Adenandra fragrans*, *Eriostemons*. *Aphelexis*, *Chorozemas*, *Azaleas*, and so forth.

The third prize, of £10, for these collections, was won by Mr. Green, gardener to Sir E. Antrobus, Bart. His best plants were—*Franciscea calycina*, *Tetradlea ericifolia*, *Acrophyllum venosum*. *Eriostemons*, *Heaths*, and *Azaleas*, made up the bulk of the rest.

And a fourth prize, of £7, was given to Mr. Barter, gardener to A. Basset, Esq., Stamford Hill, whose best plants were *Azalea coronata* and *variegata*, *Epacris*, *Chorozemas*, *Eriostemons*, *Polygalas*, *Azaleas*, and *Erica Cavendishii*.

An extra prize, for twenty stove and greenhouse plants, was given to Mr. Cutbush, of Barnet, and Mr. Page, gardener to W. Leaf, Esq. Both collections very good. Mr. Page had *Hedera tulipifera*, *Franciscea confertiflora*, *Ixora coccinea*, *Medinilla magnifica*, and *Tremandra verticillata*, among his best; and Mr. Cutbush, *Pimelca spectabilis*, *Aphelexis macrantha purpurea*, three *Eriostemons*, *Erica Hartnelli*, and *Statice Holdfordi*.

The collections of twelve and six stove and greenhouse ran in the same style of names. Mr. Rhodes had *Clerodendrum Kämpferi*, in twelves. Mr. Hamp had *Meyenia erecta*, also in twelves. Mr. Epps had *Rhynchospermum jasminoides*, in ditto. In sixes, Mr. Carson had *Rhododendron formosum* or *Gibsonii*. Mr. Chilman had *Boronia Drummondii*. Mr. Laybank had the only *Lechenaultia formosa* there.

In twenty stove and greenhouse plants, with or without bloom, five or six competitors appear; but the kinds differed not from the old lists. Palms, Cycas, Crotons, Cissus, Platycerium, *Berberis Bealei* (five feet high), from the Messrs. Jackson; *Farfugium grande*, in Mr. Rhodes' collection. One thing in the Messrs. Jackson's deserve attention: the plant which went all along as *Philodendron* and *Pothos*, &c., *pertusum*, is called *Monstera deliciosa*, a revival by Dr. Hooker very likely; but there is a *Monstera pertusa* in the West Indies, which the Indians use medicinally in cases of dropsy. A very good specimen of *Sansevieria zeylanica*, in Mr. Cutbush's collection, was called *javanica*, probably by mistake: the same plant was named *zebrina* in another lot.

In *Orchids*, the first prize for twenty kinds (from Amateurs) was awarded to Mr. Gedney, gardener to Mr. Ellis, Hoddesden, Herts. He had a new plant of *Cattleya citrina* and *superba*, each with three blooms, *Dendrobium nobile*, *macrophyllum*, and, *Devonianum* with Vandas, Aërides, Phalænopsis, and all in very good, sizable, healthy style of growth. Mr. Wooley, gardener to J. B. Ker, Esq., had the next prize for twenty. His rarest were *Gongora truncata* and *Lælia flora*, with nine spikes of bloom. Mr. Keele had the third large collection. The Messrs. Jackson had the last prize for nurserymen's collection of fifteen kinds: they had *Lælia grandis*, *Lycaste gigantea*, and the best kind of *Lycaste Skinneri*, *Saccolabium retusum*, *Phaius Wallichii*, *Trichopilia coccinea*, *Dendrobium densiflorum*, with Vandas, Aërides, and others.

Mr. Carson had the first prize for twelve: his best were—*Acrophyllum giganteum*, with nine spikes, *Vanda teres*, *Dendrobium fimbriatum* and *nobile*, *Cattleya Mossiæ*, *Burlingtonia fragrans*. Mr. Clark second in twelve: his best were—*Cattleya Skinneri* and *Mossiæ*, *Dendrobium nobile*, *Dalhousianum* and *tortilis*, *fimbriatum*, and *fimbriatum cucullatum*, with *Phalænopsis grandiflora*. Mr. Morris was third: his rarest was a very large pale *Cattleya*.

For collections of six Orchids, Mr. Green was first, with *Dendrobium densiflorum* and *nobile*, *Cattleya Skinneri*, *Acrides crispum*, *Oncidium ampliatus major*, and two other Orchids. Mr. Dods had the second prize in this class, with *Lycaste Barringtoniæ* (which is of breed of *gigantea*), *Phalænopsis grandiflora*, *Dendrobium densiflorum album*, which looks like a variety of *Farmeri*.

For ten *Azaleas*, Mr. Carson was first, with magnificent plants of *Broughtonii*, *speciosissima*, (double red), yellow *China*, *lateritia*, in one mass of bloom; *triumphans* ditto; *exquisita* and *variegata*. Mr. Page second, with neat, small plants of *Apollo*, *Perryana*, *Duke of Devonshire*, all red; and *exquisita*, *Ivoryana*, and *magnifica*, best light ones.

Collections of six *Azaleas* were numerous; but the kinds were not different from the above. The two

richest-coloured were in Mr. Peed's, being *delicata* and *coronata*; and two others, in the Messrs. Fraser's collection of tens, which were *Holdfordi* and *vivicans* and *criterion* and *Iveryana*, were the two best light ones. Mr. Ivery and Messrs. Fraser had each a collection of different new Azaleas, and two first prizes: *crispiflora ramentacea* (a small white), *obtusata* (a small red), and *Bealei* were the most distinct kinds of these. The Messrs. Lane had a collection of standard Azaleas.

PELARGONIUMS.—Mr. Turner had the first prize for seedlings, and for the collections; *Desdemona*, *Countess of Derby*, and *Ariel* being the best light ones, and *Lady Canning* the best red with dark back. The best of Mr. Beck's seedlings were *Sir Colin Campbell* and *Leviathan*. The Messrs. Fraser had a good seedling, called *Echo*. Mr. Kinghorn had *Christina*, *Lizzy*, *Sheen Rival*, and *Lord John Russell*, all bedding kinds. The first is the best Rose we have; the last a more dwarf, and better bloomer, than *Tom Thumb* and *Sheen Rival*, the best of the *Pélistier* and *Richmond Gem* blood. Mr. Turner's *Scarlet Globe* and *Queen of Summer*, the latter an Oak-leaf and seen for the first time, are both good bedders.

Mr. Turner's twelve Pelargoniums stood thus, in three rows:—*Hermione*, *Lucy*, and *Governor-General*; *Sanspareil*, *Wonder*, and *Eugene Duval* (the new-colour kind), *Diana* (a famous white), and *Carlos*; *Miss Foster*, *Admirable*, and *Viola* (another new style)—the cream of the old *Lady Flora Hastings* Geranium.

Mr. Dobson was second, with *Arethusa*, *Governor General*, *Vestal*, (white), *Starlight*, *Rosamond*, *Admirable*, *Clara*, *Una*, *Sanspareil*, *Euphemia*, *Luey*, and *Wonderful*.

The Messrs. Fraser were next, with *Sanspareil*, *Portia*, *Governor General*, *Exhibitor*, *Rosamond*, *Carlos*, *Basilisk*, *Rowena*, *Vesper*, *Exactum*, and *Majestic*.

Mr. Gains was fourth, with a mixed collection of French and English alliance, of which *Eugene Duval*, aforesaid, and *James Odier*, were the best; and another fourth prize, to Mr. Weir, for another twelve, as above, with the addition of *Virgin Queen*, which was the oldest kind there; *Exactum* is a half dark, half white kind, in the way of *Virgin Queen*.

Mr. Nye, gardener to E. Foster, Esq., had the first prize for ten Pelargoniums, which were—*Viola*, *Fair Helen*, *Wonderful*, *Meteor*, *Carlos*, *Rosa*, *Sanspareil*, *Queen of May*, and *Iris*.

Mr. Wiggins, gardener to E. Beck, Esq., was second, in tens—*The Bride*, *Luey*, *Fair Helen*, *Governor General*, *Sanspareil*, *Gem of the West* (a white), *Laura*, *Fairest of the Fair* (a half-fancy white kind), and *Admirable*. All these made a better mixture than usual—my reason for giving all the names—and they were placed to the best advantage, just as they are here booked.

The *Fancies* were all of a caste, and made a bank of great sameness of beauty. First, there was Mr. Turner's *Carminatum*, *Delicatum*, and *Madame Sontag*, *Madame Rougière* (the best there, a rich purple crimson, with a light wink in the eye, not throat—Pelargoniums cannot, botanically, have throats), *Madame Van de Weyer* (as lively as the lady after whom it is named), and *Evening Star*.

Then, the Messrs. Fraser, with *Celestial*, *Jenny Lind*, *Formosissimum*, *Delicatum*, *Advancer*, and *Madame Sontag*. Third, Mr. Gaines, and fourth, Mr. Dobson; and two good private collections from Mr. Weir and Mr. Francis.

The ROSES were magnificent. First in sixes, Mr. Terry, with *Auberon*, *Comte de Paris*, *Madame Willermoz*, *Paul Perras*, *Paul Rieaut*, and *Souvenir d'un Ami*, fine. Second, Mr. Peacock, Stockwood

Park, with *Chénédoles*, *Souvenir de Malmaison*, *Géant des Batailles*, *Baronne Prevost*, and *Paul Perras*.

Messrs. Lane & Son, first in twelves, with *Duchess of Sutherland*, *Madame Willermoz*, *Baronne Prevost*, *Comtesse Mole*, *Louis Buonaparte*, *Louis Perrin*, *Damask Queen*, *Coupe d'Hebe*, *Paul Perras*, and *Chénédoles*. Mr. Paul second, with *Madame Willermoz*, *Belle Marie*, *Paul Perras*, *Vicomtesse de Cazes*, *Brennus*, *Niphotos*, *Auguste Mie* (splendid), *Louise Odier*, *Paul Rieaut*, *Coupe d'Hebe*, and *Auberon*. Mr. Francis next, with a splendid *Géant des Batailles*, *Vicomtesse de Cazes*, *Coupe d'Hebe*, *Souvenir d'un Ami*, *Chénédoles*, *Niphotos*, *Paul Perras*, *Madame Willermoz*, *Auberon*, *Malmaison*, *Baronne Prevost*, and a fine *Devoniensis*. The Roses in the other collections were of the same kinds.

The FUCHSIAS followed the Roses, in collections of six plants. Mr. Bousie, the winner of the best prize, had *Prince of Wales*, *Queen of Hanover* (white), *Voleano d'Aqua*, *Venus de Medici*, *Wonderful* (a magnificent thing), and *Bank's Glory*. Mr. Webb second, with *Duchess of Lancaster*, *Venus de Medici*, *Voltigeur*, *Glory*, and *Inaccessible*. Mr. Elliot had a very nice light one, called *Snow Ball*, in the third prize collection, after the fashion of *Venus de Medici*.

Then followed the CALCEOLARIAS. They were just the right-sized plants, and bloomed to the right degree. Mr. Dobson had the first prize for twelve kinds, of which *Aurea floribunda* is the most useful, as it is the best yellow dwarf bedder of all the Calceolarias, and is so distinct, that the plants want no tallies. It is to occupy the place of honour, this season, at the Crystal Palace gardens. Another very new and distinct herbaceous kind, called *Florentina*, was in the second prize collection. It comes the nearest to a scarlet front, and is a most beautiful thing.

After these followed a long bank of Helichrysums or Everlastings, which, like Pelargoniums, produce too much sameness, when not mixed, for relief, with other plants. There was nothing new among them.

All the rarities and novelties succeeded the Everlastings, beginning with *Viburnum plicatum*, from Mr. Ivery, who had a third prize for it—a hardy, newish "Snow Ball," Guelder Rose-like plant. A large yellow Azalea, called *Emperor of England* (a shocking bad name), had a fourth prize. It came from Mr. Young, of Milford Nursery. A neat, double, or half double, white Geranium from Mr. Turner, and called *Gem of the Undercliff*, was much admired: it had a fourth prize. *Dillwynia plumosa*, from Mr. Green, had a third prize. Mr. Williams, gardener to A. Fairrie, Esq., of Liverpool, had a prize for a very large, light Lælia or Cattleya. Also a seedling Pine Apple, in plant and fruit, which, to all appearance, will be a valuable thing. The Messrs. Jackson had those new Orchids which I named from the Meeting in Regent Street. A lovely Odontoglossum, with light speckled flowers, *Vanda Jenkinsi*, from Assam, the ivory white *Lyeaste Skinneri*, and the dark large variety of *Trichopitium tortilis*. These were followed by Mr. Veitch's new plants; the only plants he exhibited. Perhaps the best of them all, for general purposes, was a new, hardy Olive, from Japan, with large Holly-like leaves, called *Olea ilieifolia*. The flowers are said to be as sweet as those of *Olea fragrans*. *Thuiopsis dolebrata*, very much like some Lycopod in the younger growth; in short, a lady-like Conifer at last, and "glad of it." *Arthrotaxus imbricata*, which stood out at Elvaston Castle several years. *Begonia Regina*, a very fit queen for *Begonia Rex*; a capital idea. *Cyanophyllum magnificum*, a most magnificent Melastomad, which I booked this time last year, from Chiswick, had the good luck to get a first prize here, as a new plant. *Cupressus Lawsonii* had also a first

prize for a new plant, but I booked it long since. *Campylobotrys argyroneura*, another Melastomad, after the style of Calyptraria. *Theophrasta macrophylla* and *imperialis*, *Nedularia pictum*, *Aralia Sieboldi*, and some others of less note. After these a standard of *Rhododendron Acklandi*. A white-flowered kind, from Mr. Gaines, had a third prize.

The odds and ends included many things, and some very good specimens of culture, but I shall "catch it," for leaving so little room for the dessert. I actually fancied the fruit would be consumed before one o'clock; such watering of teeth I never witnessed before. If I see the state of your dessert, after dinner, I would forfeit a share of it, if I could not tell how your "company" stood in the peerage; and if I could not tell how high a man stood in the peerage, by merely seeing him look at a fruit stand, I would forfeit the use of my eyesight, or my whole head on the block; but it would never do to tell tales that way. This was the first time I had seen *Cucumbers* growing in pots exhibited, plants and all. There were also Figs, Raspberries, Strawberries, with green Peaches, and green Apricots, exhibited in pots. A cockscombed *Providence* Pine, over 6 lbs., had the first prize for them, but the weight of the second prize Pine was not given. Three good bunches of the *Chasselas Musqué* Grapes, from Mr. Fleming, Trentham, showed that he had overcome the bad habit of cracking, in this most delicious Grape. An extra prize was given to Mr. Bailey, of Shardeloes, for three bunches of Grapes called *Muscadine*, but surely they were not *Muscadine*, and I could not reach over to taste. All the principal Grapes and Pines looked very evenly grown; some not extraordinary, and some not worth looking at. Figs and Cherries the same; and a very small netted Melon, which was cut by the Judges, appeared to me to be very near the old original *Green-flesh Egyptian* Melon, the best-flavoured Melon I have yet tasted.

The garden was alive with Tulips, the great body of them being planted in the mixed style, which cannot give "effect" more than a bed of florists' Tulips. The most insipid bed, to my eye, which I can recollect, was a prize Tulip bed on the west side of Manchester, but the owner told me it cost him over seven hundred pounds. Such is the difference between fancy beds and flower garden beds.

A new move is on the wing, for the planting of the terrace centre this season. All that is yet planted, is the bottom row of beds, in which the *Acacia* and *Rhododendron* standards make the circles into pincushion-beds. Well, these pincushion-line of beds are to be alternately of *Tropæolum elegans* and *Calceolaria aurea floribunda*, which we lauded last year in THE COTTAGE GARDENER. The long, oblong beds between these, are also in a new arrangement. Five rows of *Tom Thumb* in the middle, and a band of purple *Verbenas* in two rows on each side, but not across the ends of the beds. They will give just four feet of scarlet, and a foot of purple at back and front, the exact dimensions which I could fathom from one of the most exact masters, or rather mistresses, of planting in England, and which I lately booked. But I shall not anticipate a grand review day among all the beds there, when they are in the glitter of their new uniform.

D. BEATON.

AIR-GIVING TO GARDEN STRUCTURES.

THERE is scarcely any subject connected with practical gardening, which has received so little attention as this—one of the most important proceedings connected with our profession. This seems an extraordinary affair. Is it that the thing is in its nature, or

character, mysterious, and indefinite; or that it cannot be reduced to anything like system? Certainly, it will not be expected, that we can, in such a case, lay down cut-and-dry rules, and state the amount and character of the ventilation to be pursued on any given day. This is impossible, inasmuch as our climate, although mainly divisible into four somewhat distinct seasons, yet is liable to amazing vicissitudes in most of them; and, of course, modes of ventilation must be modified accordingly. I may here, at the outset, state the objects of ventilation. They are mainly two—the escape of accumulated heat, and the correction of a vitiated atmosphere by a circulation of pure air. But the way in which these two objects are carried out are various, and dependent entirely on circumstances. Those who will consider the matter fairly, should first of all look into the science of pneumatics, and ascertain the characters belonging to what is called the air, its relative gravity, modes of interchange, &c. One broad fact may be here named as a prelude to succeeding explanations—that the admission of air in severe winter weather is a procedure requiring much more caution than at other periods; the frosty breeze is of insidious character, and this, too, enhanced in proportion to the discrepancy between the respective temperatures of the inside and outside. Most of the readers of THE COTTAGE GARDENER must be aware of this latter fact, by observing the effect of draught through crannies, when, perhaps, the Yule log is blazing, and the air outside a keen north-easter, of some 20° of frost. What could there be but a rapid interchange; the room within at a temperature of 60° to 70°? Here we have a discrepancy of some 50°, or nearly so. Well may the good folks inside complain that they cannot keep their feet warm. I may here, in returning to our garden structures, state the consequences which generally ensue from a neglect of ventilation. They are as follows:—The plants draw, or become weak and long jointed; a corrupt atmosphere gives an unhealthy colour to the foliage; stagnated damps are engendered in parts of the structure, frequently giving birth to mosses, and other cryptogenic productions; the flowers are paler, and lose a proportion of their aroma; an indisposition to produce blossom, is generally a concomitant; insects of all kinds increase more rapidly; and fruits are deficient in flavour. These are the evils which may be expected to ensue from bad ventilation: of course they do not all happen on every occasion, but receive their being and character according to the aggravation of those circumstances which engender them. In looking over the principles of ventilation, we may at once see, that in endeavouring to teach the uninformed, it is necessary to adopt some division of the subject. This is not a very simple task, but since I have travelled thus far, I must endeavour to do so to the best of my abilities.

First, then, I may observe, that there are general principles of ventilation common to nearly all seasons; and next, that there are many special cases which form an exception, either in mode, or degree, or both. The special cases to which I allude, consist mostly of singular tribes, or families of plants, such as Orchideous plants, Ferns, &c. But certain other families, which, for the most part, submit to the most ordinary treatment, have periods when a departure from the ordinary routine is of much benefit. Thus the *Camellia*: at this time my *Camellia* house is almost constantly shaded; but this is not the general practice. It is also kept very damp. But these would be serious conditions when the plants were in blossom through the winter. The house is scarcely ventilated at all whilst they are making their young growth: this, too, would not be the case at other periods. But these are only a few solitary cases: enough, however, to show to those unpractised in

gardening affairs, that mere set rules, founded on the practice of some one, and devoid of principle, is not the kind of armour that a modern gardener must depend on. Apart from tribes, or families, of ornamental plants, we must look into the early forcing house, the warm pit, the old-fashioned, or, let us say, Abercrombian hotbed. Here is something more to be noted. Then we may pass on to the cold pit, or hibernatory, cold frames, &c.

But to enter into thorough detail on all these subjects, would occupy a dozen COTTAGE GARDENERS, and, what is, perhaps, as bad, or worse, too much of the valuable time of the majority of our readers. I will, therefore, take a mere common-sense view of the remainder of the matter, and at once speak of those general principles which regulate alike the practice of all first-class gardeners.

Thorough ventilation consists in admitting a complete circulation, both by means of the escape of heated, or contaminated air, at the highest point, and a consequent influx of fresh air from the lowest level; but this has to be performed with a due regard to the wind, its violence, and its characters. Lively currents of mild winds are, in the main, beneficial, although they may slightly agitate the vegetation in the interior; but when such are chilling to the human body, they must be avoided. In managing this matter, a due regard must be paid to the proportion the front air bears to that of the back. The greater the egress at the back, or apex of houses, the greater will, of course, be the demand for fresh air from the front, and *vice versa*. In vineries, peach houses, &c., it is very frequently necessary, in summer, to open as wide as possible both front and back ventilators, or the inmates become scorched; and on most occasions it is better to starve than to burn, if a risk must be run. Nothing looks worse, in vineries, than to see singed foliage; it is not only a disfigurement to the trees, but a most serious injury to their permanent welfare. In what is termed "catching," or fluctuating weather, the ventilation requires much attention, and to be attended to several times within half-a-dozen hours: in such cases there is frequently neglect;—the parties, perhaps, have too many irons in the fire, and some burn. Hailstorms must be studiously guarded against; these sometimes occasion much mischief in a few minutes. They generally fall perpendicularly, or, at least, they seldom do much harm through the front sashes; on such occasions, then, and with alternations of bright sunshine—for bright indeed it generally is at such periods—the front ventilation must be proportionately more liberal, and every attention given. This practice, however, refers more to summer management than to winter: the months of April, May, and June, are more concerned than, perhaps, any others. In all cases, the chief point is, to know the character of climate, and amount of temperature, the plants or trees require, and that, too, with regard to their condition and the period. This kind of knowledge is not speedily acquired, certainly, and I lament that I cannot impart it in a few words. The following may be taken as maxims generally correct:—A very copious admission of front air, and little at back or the apex, has a tendency to create a great disparity between the temperature at back and front, and to chill the frontage. Much back air and little front is likely to encourage a keen draught. When cutting winds, or a very sharp air, therefore, prevail, it is frequently good policy to give no front air unless compelled. But there are no maxims which bear continual sway: as conditions change, we must change our policy also.

In early forcing (such as Vines, &c.) perhaps more caution is needed than in most things; particularly

during the months of January and February, for then the sun has little power; but when the forcing gets into March he finds the case much altered, and this is generally his most trying time. With a bright sunshine, and a cutting south-easter, he is sometimes at his wits end to keep things right. By the bye, of all the winds that blow, perhaps a south-eastern is the worst for glazed structures, especially lean-to houses. They are every moment robbing the roof of its warmth, and the roof borrowing from the interior. As for giving air, especially front air, extreme caution is frequently requisite, and when absolutely necessary in such circumstances, it would be well if we could have some finely-pierced apparatus to riddle it into the house. We all know how the very early Cucumber forcer—in dung-beds—occasionally takes the precaution of nailing a mat, or canvass, over the air-giving points, in order to break the fierce action of the air, and, as it were, to riddle it through. As for the ordinary greenhouse, that is the easiest to ventilate of most structures, and I need not say much on that head.

Ventilation is frequently had recourse to, as a preventive of drip, and very necessary too. I have a Camellia house which is notorious for drip; the house having been glazed some thirty years since, and, consequently, liable to all the flaws and frailties of those times. I have Camellias in constant blossom here from the early part of November until May, and we rarely have one blemished by drip. This is owing to the constant maintenance of air day and night, both at a high and a low level; and the constant use of very moderate firing, by which the hot-water pipes are always lukewarm. This induces a lively circulation of air, which dissipates the vapours before they can become condensed. One excellent adjunct in the prevention of drip would be a roof covering to prevent condensation, but such are very perishable, and difficult to work during the alternations of frost and thaw: indeed we have scarcely a proper material for the purpose at present known. The prevention of drip, as to blossoming plants in winter and early spring, is a most important affair; and, in conjunction with the pains taken over ventilation, firing, &c., much discretion should be exercised in the application of water, doing so sparingly and principally in the morning early.

There can be no doubt that long confined, and, by consequence, stagnant air, is highly prejudicial to vegetation in general; especially to those plants with thin foliage, and of speedy growth. There is every reason to believe in an analogy between animals and plants in this respect. Foul, or stagnant air, long continued, casts a kind of skin over the foliage of plants, and this, by partially closing their "breathing pores," of course vitiates their juices, or impedes reciprocity between the foliage and the root, which is of great importance. And how can we expect plants, or trees, to blossom in full vigour, with all their parts perfect, without that subtle, yet invigorating element—pure air? As to insects, fungi, &c., if you want any for special purposes, you will only waste your time by hunting hothouses where judicious ventilation is maintained, and where, by a cleanly system, all corruption, or vitiation, is met half way. The drawing of plants, or trees, *alias* weakening, *alias* elongation of the joints, with some other *aliases*, is, of course, clearly traceable to a want of free circulation, as also to too much closely confined damp-producing attenuation, and a scant of the colouring deposit in the leaves of plants, called, I believe, by our botanists, chlorophyll. Let me here, too, warn the uninformed of that affair called excitability, or, a disposition to receive damage on any extreme of atmospheric conditions. The longer garden structures are kept badly ventilated, the more this kind of tenderness increases. The colours of flowers

too, and the flavour of fruits, are very incomplete without free ventilation. What poor-coloured things the *Ribes sanguinea*, or the *Weigelia rosea*, are, when forced; all owing to the want of breathing the pure air and a puff of wind occasionally, together with a deficiency of solar light. As to fruits, only observe what liberal ventilation is allowed by good gardeners to Peaches, Melons, Grapes, &c., when ripening; that is, providing they are not going against time, as it is called.

Before concluding my explanations, I must beg to offer an opinion, that if all hothouses were properly constructed, and properly heated, together with that full amount of provision for air moisture, which would, when necessary, prove equal to any demand, there is scarcely anything we cultivate but would be better for air-giving night and day. This I have, certainly, never seen realised, and never had it in my power to carry out, but it is an old conviction, and I am by no means solitary in the opinion. Indeed, when it is considered that everything we cultivate in houses, not only endures, but enjoys such conditions in their wild state, how is it possible to doubt it? The great obstacle, it would appear, to a full recognition of this fact, is the dread of over-dry in-door atmosphere, through the constant loss of vapour. But surely we have means in these times of producing as constant a supply. One thing may here be observed, that in severe weather, or when there is a certain amount of discrepancy between the inside and outside air, and air moisture continues to be engendered within, it is very apt to descend in drip, a thing by all means to be avoided. Now, with a constant ventilation, there is no need to fear this drip. Of course, such would consume a little more fuel, but this amount would not be found very material.

It is only proper, however, to remark here, that, albeit constant ventilation might be congenial to the inmates of our houses in general, yet there are many special objects in gardening which demand other considerations. The early forcer, endeavouring to produce his Grapes, Pines, Peaches, &c., for sale, or for exhibition, has frequently to push them forward by all possible means; and such circumstances require that a great amount of sun heat be enclosed betimes in the afternoon, and a high and moist atmosphere preserved during the earlier part of the night. I have here to confess, that constant ventilation would frequently cause the loss of a week or two; and this is, in many cases, a serious affair as concerns market prices, or exhibition days. Such things as early Cucumbers seem particularly to enjoy this close shutting up; it, of course, hurries them forward: at the same time we all know that Cucumbers succeed in the very highest degree in warm summers, and under proper circumstances, albeit they are subject to winds, storms, and other vicissitudes.

R. ERRINGTON.

ASPARAGUS.

EVERY writer on Asparagus, for the last two hundred years, was radically wrong—D. Beaton among the rest. In gardening, the word radical means root or roots, or belonging to the roots of plants. We were all radically wrong; that is, we were wrong at the roots.

It is curious that four generations of gardeners should pass away, without any one of them having ever read the true story about the roots of Asparagus. I took the pains to look back into the old authors, to be able to say so much. But all that time the thing was well known to another race of gardeners, who did not know a B from a bull's foot mark. How I came to know it was by the merest chance in the world. A gardener, of my own age, who knows his P's and Q's very well (but these, and the letter O, to sow his annuals round it, are the only three letters he ever troubled himself with), had a few beds of most excellent Asparagus for the last four years;

and, last summer, having seen the ground on each side of the Asparagus beds filled with self-sown Asparagus seedlings, I asked him to save me a lot, to make a new bed in the Experimental Garden; and he did so, in his own usual way, which is quite new to the whole reading world of gardeners.

I went for the young Asparagus plants in the third week in April; but the first week in May is the best time for this kind of "bedding-out." Well, my friend had the plants ready for me, sure enough. They were two years old and one year old, mixed. He forked them out of the ground last November, and "left them to be proved for hardiness"—exposed to all weathers on the bare surface of the same piece of ground—and out of 260 plants, or roots, four only died from the severe frost at the beginning of March; the rest were as plump and healthy, in every respect, as those which were not disturbed, and they were ten days in advance of the same kind of roots in the same piece of ground; every one of them was sprouted, more or less! My friend's practice over more than forty years, as a head-gardener, and that of his father and grandfather before him, went to prove that Asparagus seedlings are, more or less, hardy according to the "suction" of the old plants in the bed; some years and some beds will "throw" seedlings, one-fourth of which cannot be depended on for strength and for hardiness. His practice has been to expose the roots for a new bed, to "prove" them whenever he had to make a new bed, by forking them out of the ground in the autumn; giving them a winter's exposure to the frost, and planting in the spring when they are sprouted one inch. By this treatment he never failed, or had a gap in any one of his Asparagus beds all that time.—D. BEATON.

ON SOME MOULDS REFERRED BY AUTHORS TO FUMAGO, AND ON CERTAIN ALLIED OR ANALAGOUS FORMS.

By the Rev. M. J. BERKELEY, M.A., F.L.S., and J. B. H. J. DESMAZIERES.

It is well known that the leaves of various trees are frequently, more or less, covered with a black sooty or velvety stratum, to the great detriment of their beauty, and frequently of their health and productiveness, by choking up the stomates, and thereby preventing the access of the atmospheric air to the tissue of the leaves. A case of this kind, which occurred in Ceylon on coffee, was, a short time since, noticed by one of us in this Journal; the Orange trees in the Azores and Madeira have, of late, most grievously suffered from a similar affection; and Dr. Montagne has very recently given an account of an extensive disease of this description amongst the Olive trees in the neighbourhood of Perpignan, in 1829. Not only the leaves, but the branches were, more or less, covered, and the harvest was materially affected. Similar growths are common on the leaves of Plum, Lime, Hazel, Rose, &c., and on the different species and varieties of the genus *Citrus* in our conservatories. They are often, if not always, preceded by honey-dew, whether arising from aphides or from a sugary excretion from the leaves themselves; frequently, too, they are accompanied by some species of coccus, especially in the genus *Citrus*. However similar they may be in outward appearance, the parasites by which these diseases are produced differ materially in structure; in some the characters are so singular, that we have thought some account of the particular group by which they are exhibited may not be uninteresting.

A portion of these plants consists of species of the genus *Antennaria*, as that of the Olive mentioned above, specimens of which were gathered by Dr. Seouler, in Portugal, in 1846. Others occur commonly on Heath, on different species of *Cistus*, on the Scotch Fir, &c. One very highly developed form, rising an inch or more from the surface, and investing whole plants with a spongy mass, is found in the islands of the southern hemisphere, and in South America; another species frequently covers the leaves of the Ferns in Juan Fernandez; and one has been sent by Mr. Curtis, from South Carolina, on the leaves of *Kalmia latifolia*, which appears to be identical with an undescribed species gathered by Mr. Broome in the west of England on the leaves of the Sycamore.

Other forms were separated by Persoon under the generic

name *Fumago*, of which he made two sections. It is with the second of these, distinguished by the name *Polychæton*, that we are principally concerned at present. The first consists, in great part, of strata of the common *Cladosporium herbarum*, or possibly of one or more distinct species, mixed up with species of *Mystrosporium*, *Triposporium*, &c., but seldom in a very perfect state. The *Cladosporium* is commonly developed on a dusty coat of honey-dew, and affords a convenient matrix for the growth of other mucedinous fungi. This is the *Cladosporium Fumago*, Fries and Link, and comprises, possibly, some species even of Persoon's second section. Fries, however, has erred in including under it all species of that section, contenting himself merely with the remark, "The plant, as it occurs with us, has delicate fibres; but in the south of Europe, on the leaves of Olive, Lemon, &c., it forms thicker spots and fibres." To these we shall have to advert presently.

These plants, then, consist of a creeping thallus or mycelium composed of moniliform threads, resembling those of *Antennaria*, or, as in that genus, occasionally to a greater or less extent mixed with filaments not at all constricted at the articulations. For the most part, they are of a more or less bright brown, when seen by transmitted light; but sometimes portions are found nearly colourless, even when care is taken to distinguish mycelia of other fungi, which frequently occur amongst the dark threads. There is generally a cellular pellicle spreading over the surface of the leaf, from which the mycelium springs immediately, but which sometimes arises from the rooting base of its threads. A similar structure exists in many epiphytous fungi, as in *Asterina*, and even occasionally in *Cladosporium*—in such cases the pellicle being often readily separable from the entire of the matrix. The mycelium gives off numerous perithecia, which are vertical, and frequently more or less branched. They consist at first, it is believed, of a simple membrane, though possibly a layer of cells is deposited in the course of their development on the walls. In all cases, however, threads run up from the mycelium, either subsequently or contemporaneously with their first origin, partially covering the inner sac, and more or less closely crowded, their apices frequently extending beyond them, and forming a fringe, the cilia of which are more or less divergent, consisting of such loosely-connected joints that the ultimate articulations frequently fall off, and form, doubtless,

one mode of propagation. These investing threads are precisely analogous to the coating in Mr. Thwaites's curious genus *Cystocoleus*, in which also the apices of the threads are free. In *Rhizonema*, an alga which is also invested with cells, the cellular coat, from the creeping habit of the genus, gives out rootlets; and the threads of which it is composed are sometimes distinctly separate from one another at the apex of the series of endochromes, which they surround. The structure is well illustrated by what takes place constantly in *Batrachospermum*, and some species of *Callithamnion*, where a descending stratum of cellular threads is given off at the base of the lower articulations of the branchlets, investing the main divisions of the plant, and increasing them in thickness. The peridia, or perithecia, whichever it may be thought best to call them, are sometimes simple, but frequently more or less branched, obtuse, or strongly acuminate, and contain rather large, delicate asci, which are, doubtless, in many cases, absorbed at an early period of growth; for the sporidia are frequently abundant where there is scarcely a trace of asci, and that even before they have arrived at their full growth. In all such cases, as in *Lycoperdon*, *Scleroderma*, &c., there is little doubt that the sporidia are perfected after the delicate sac in which they were at first produced is entirely absorbed. Though necessary for them at an early stage of growth, there is no reason why they should not be absorbed when the sporidia have arrived at such a state as to be capable of increasing in size and development, as well amongst the general contents of the common peridium as in the individual ascus. Perfect fruit has not been found in all the species, and not a trace of true sporidia in the species which we have placed in the third section, though it is undoubtedly propagated by the upper articulations of the threads of the mycelium, which fall off in great abundance. It is, indeed, possible that some of the species may not contain asci at all, but produce their spores on sporophores, as in the genus *Sphaeronema*, for on pressure a cloud of very minute sporelike bodies is given out from the peridia. Should this prove eventually to be the case, the name *Polychæton* could be retained for such species, which would form a genus amongst sporophorous fungi exactly parallel to *Capnodium* amongst the *Ascospori*. For the present, however, we must consider all as agreeing in essential structure, as indicated by the precise similarity of outward characters.

Scorias, in which Dr. Montagne has observed the asci, differs principally from *Capnodium* in the gelatinous coat which binds the threads of the mycelium together, which are, indeed, far more profusely developed; but a modification of this exists in what we have called *Capnodium Fuligo*. The threads of *Tricharia*, which resemble in habit, and frequently in their place of growth, those of Harvey's *Microxiphium*, certainly have a compound structure, and are, probably, rather of the nature of perithecia than flocci. Dr. Montagne has observed bipartite bodies in them; and, though there is no mycelium, it is possible that the genus may not be far distant from *Capnodium*, unless, indeed, the crust be considered as a component part, which is at least doubtful. Dr. Montagne has once seen a body, attached to one of the bristle-like processes, resembling the fruit of an *Helminthosporium*; but he is himself doubtful whether it may not be extraneous. There is a sort of external resemblance between some *Capnodia* and *Synalgyssa*, which, it may be observed, has lately been found in great perfection near Bristol by Mr. Thwaites. The resemblance, however, is but external, the whole structure of the supports of the Apothecia and their investing coat being entirely different, resembling, in point of fact, that of *Palmella* rather than of any fungi. *Asterina* and *Meliola*, though provided with an abundant mycelium, have no investing coat to the peridia, though in the latter rigid hairs spring from



Fig. 1. Asci and sporidia of *Scorias spongiosa*, Fr., magnified 600 diameters, From a sketch by Dr. Montagne.

it. *Melanospora*, Corda, approaches perhaps the nearest, as well in form as in essential structure, the ciliated orifice indicating the threads of which the peridium is either composed or with which it is coated, a structure, be it observed, pointed out many years since by one of us in a strictly analogous production in another series, viz., *Sphæronema blepharistoma*, Berk., and which is indicated also by the fringed orifice of *Sphæronema subulatum*. Finally, it may be mentioned, as a mere matter of analogy, that hairs occur amongst Melastomads, bearing a striking resemblance to the perithecia of *Capnodium* when unbranched. Sometimes they seem to be built up of a central articulated thread, with an exterior coating of cells; sometimes the interior thread appears to be entirely deficient, except at the summit; but opportunity has been wanting for considering this analogy more minutely. This structure, as far as we can ascertain (after a very imperfect inquiry indeed), has not been noticed before.* It exists in the hairs on the leaves of species of *Pleroma*, *Melastoma*, *Heterotrichum*, and *Heterocentron*, and even the delicate hairs on the under surface of leaves of *Pleroma heteromallum* are of a similar though somewhat modified structure.
(To be continued.)

BLOOMING THE CHRISTMAS ROSE.

TELL your correspondent "KATE," to try liquid cow manure to her Christmas Roses. Mine blossomed beautifully last winter, although the plants were removed in July, from a light peat soil in South Wales to a clayey ground. Afterwards, they were again moved to another part of the garden, and the plant divided. They looked extremely shabby until the flowering time, when I watered them as usual with the liquid manure, and the blossoms were large, numerous, and purely white. Since then the plants have grown vigorously.
—A. R.

FLORISTS' FLOWERS.

PICOTEES.

SIX NEW VARIETIES.

Ada Mary (Smith), light red edge; petals large and smooth, very pure white ground. Good substance, and fine habit.

Cedo Nulli (Headley), heavy red edge; pure white ground. Very smooth, and good substance.

Charles Turner (Kertland), light red edge. Pure white.

Eva (Smith), light rosy-scarlet edge; smooth, stout petals. Large and constant.

Exquisite (Turner), light purple edge; smooth petals, of a good form and substance. Very good.

Lauretta (Smith), medium red edge; smooth, pure; of a good substance. Full and constant.

TWELVE SELECTED OLDER VARIETIES.

RED EDGED.

Dr. Pitman, H. (Turner).

Mrs. Norman, H. (Norman).

Mrs. Headley, L. (Headley).

PURPLE EDGED.

Amy Robsart, L. (Dodwell).

Finis, L. (May).

Mrs. Eyre, L. (Eyre).

(H. heavy edged. L. light edged.)

ROSE AND SCARLET EDGED.

Ariel, L. (Turner).

Mrs. Drake, H. (Turner).

Mrs. Turner, L. (Dodwell).

YELLOW GROUNDS.

Aurora (Dobree).

Euphemia (Barraur).

Queen of Yellows (Willmer).

PINKS.

After the frosts are over, press the soil down to the plants; stir the ground between them, and look out for slugs. As soon as the flower-stems begin to push forth, place shoot sticks, about a foot long, to each, and tie the stems loosely to them. This is all the attention the Pink requires for the next six weeks.

SIX NEW SELECTED VARIETIES.

Essex Buck (Maclean), dark laced. A large, full, thick flower, very pure white.

* Except, indeed, the hairs of Melastomads be considered as setæ. A similarly constructed seta is figured by Schleiden (Grundzüge, vol. i., p. 268), from the stem of *Dipsacus Fullonum*.

Eugenie (Maclean), rosy-lilac; good petals. Delicate and beautiful.

Gem (Maclean), red laced, pure white; medium size. Excellent.

John Bull (Maclean), dark plum-purple lacing; pure white, smooth, and fine; full and constant. A really fine variety.

Miss Eaton (Maclean), dark purple lace, evenly laid on; medium size; full and constant. Very fine.

Miss Nightingale (Maclean), bright rosy lacing; fine well-formed petals; smooth, and evenly laced. A large and beautiful variety.

TWELVE OLDER VARIETIES.

Bishopstoke Rival (Turner), dark.

Duke of Devonshire (Turner), rose.

James Hogg (Bragg), dark.

Lizzie (Maclean), red.

Mrs. Norman (Norman), purple.

Mrs. Stevens (Looker), purple.

New Criterion (Maclean), red.

Optima (Turner), dark.

Purity (Maclean), purple.

Sultan (Morris), red.

Sir J. Paxton (Bragg), rosy purple.

Unanimity (Jeans), very dark.

—T. APPLEBY.

NOTES ON NEW OR RARE PLANTS.

EPIMEDIUM VIOLACEUM. Dec. Nat. ord., *Berberidaceæ*. Native of Japan. — Herbaceous perennial. Petioles rising directly from the root; of two kinds, barren and fertile; the former trifid and glabrous; the latter twice trifid, longer than the former, smooth on the lower part, hairy on the upper part; both filiform and wiry. Leaves cordate, somewhat acuminate; margins ciliate, with rigid spreading hairs; three or five nerved, reticulated. Peduncles solitary, rising below the primary division of the petiole. Inflorescence in racemose panicles, bracteated. Calyx of four ovate-lanceolate, spreading, undulated sepals. Petals four, erect, rounded; with inflected margins; each with an ascending awl-shaped spur, violet coloured. Stamens erect, short, with oblong yellow anthers. Pistils longer than the stamens, with a cupped stigma.

This is, perhaps, the prettiest species of this beautiful and interesting genus. It is nearly hardy, but succeeds best with the protection of a cold frame in winter. It is also a very useful pot plant, and will bear a little forcing; but without any forcing it blooms early in the beginning of March, and makes a very attractive display on the front stage, or around the beds of a conservatory. Good loam, with a little peat, or leaf mould, suits it best in pot culture; and, for outdoor cultivation, good loam, rather retentive than light, and a sunny situation, are the best conditions. Propagates by division, which should be done in the autumn, or in early spring.

CHOROZEMA HENCHMANNI. Br. Nat. ord., *Leguminosæ*. Found on the south-west coast of New Holland. — Compact shrub. Branches numerous, clothed with short downy hairs. Leaves small, ternate, smooth; dark green above, pale beneath. Flowers axillary, two or three together on short pedicels. Calyx tubular, hairy, two-lipped; the upper with two teeth, the under with three teeth. Standard orbicular, red, with a yellow eye. Wings oblong, slightly twisted. Keel acute. Stamens free, ten in number. Style short, with a capitate stigma.

A very handsome greenhouse plant, and well adapted for exhibition purposes. It blooms in April and May, and is very free and lasting. Good loam two parts, and peat one part, with a good portion of sand, is the most suitable compost; and perfect draining is highly essential. Roots freely from cuttings.

ACACIA GRAVEOLENS. Hook. Nat. ord., *Leguminosæ*. Native of Van Diemen's Land. — Loose-growing shrub. Branches angular, brownish, somewhat viscid. Phyllodia long, linear lanceolate, with thickened margins, and an acute mucro. Heads of flower nearly sessile, dense, but small. Stamens very numerous, pale yellow. Fragrant.

A species worthy of cultivation for its fine phyllodia and strong fragrance. Flowers in March and April. A compost mostly of good strong loam, with a little peat, is most suitable. Propagates by seeds, which it ripens freely.

ACACIA CELASTRIFOLIA. Benth. Nat. ord., *Leguminosæ*. Native of the Swan River. Discovered and introduced by

Drummond.—Erect, and gross in habit. Branches triangular; younger ones glaucous, and covered with a granular excrecence. Phyllodia obliquely ovate, or obovate, angled, and much attenuated at the base, coriaceous; margins thickened, bluntly mucronate. Inflorescence capitate, in axillary spikes, or racemes. Heads of flower globose, large, sulphury yellow.

This species presents distinctness of character, early and profuse blooming, and highly fragrant flowers, as claims to general and extensive cultivation. The same soil and mode of propagation, as stated for *A. graveolens*, are also applicable to this species. It blooms in March and April.—S. G. W.

THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.
By P. V. M. F.

(Continued from page 85.)

SECTION 5.—WINTER TREATMENT OF BEEHIVES.

PROTECTION OF BEEHIVES.—As the winter approaches, even as early as September, when there is little for the bees to collect, narrow the entrance holes. Leave just room enough for two or three bees to go in and out together. This will prevent their enemies from troubling them. Open the entrances again in March and April, by degrees. Bees require but little care in winter. The chief thing is to keep them warm and dry. For this purpose, beehives should have new hackles of fresh straw every autumn. Let the hackle hang some way down the hive, all round, so as to carry off all wet and snow. Snow should be swept off at once from the top of the hives, neither should it be allowed to remain about the hives on the ground. There is nothing so hurtful to bees as damp, next, perhaps, to strong winds and an exposed situation.

I have now pretty well said my say. If you, reader, will only carefully follow my instructions, and do as I have recommended, you will find bee-keeping far more sure, not more troublesome, and much more profitable than you have found it yet. You must, however, pay attention to the bees, and not mind a disappointment now and then, as unforeseen accidents will happen to spoil the best calculations.

I said, at the beginning, that you ought to pay your rent by your bees. I mean, of course, if you keep a good number of hives, and look after them well. For let us see. In very good years, your swarms, managed as I tell you, may and ought to give you fifty pounds of honey each; in middling years, from thirty to forty pounds; in bad years, from ten to fifteen pounds. This gives an average of thirty pounds per hive per annum. Thirty pounds of the pure honey you will get out of your swarms, will fetch from 1s. to 1s. 6d. per lb., at least, in the London market, taking it together; and from 8d. to 1s. in the country, if sold in the comb. If, therefore, you sent it up to London every year, the produce of ten swarms of thirty pounds each, at no more than 1s. 3d. per lb., would make up a sum of £18 15s. per annum. Sold at 8d. per lb., the produce would be £10 per annum; enough to pay the rent of your cottage, and of a small piece of garden ground besides.

One piece of advice more, and I have done. Cottagers have got such a filthy way of preparing their honey for sale, that, if the gentlefolks only knew how it was handled before it came to their breakfast-tables, not a pound of it would be bought at any price. My advice, then, is, to be *very clean* in pressing out the honey. Have clean hands, clean cloths, clean dishes, clean spoons, clean everything. The London tradesmen will seldom buy honey out of the comb, because they cannot trust the country people. If, therefore, you want a good price for your honey, cut all the best and cleanest combs into good-sized square pieces, and pile them up on end side by side, not one upon another. If put into earthenware jars or pans, the honeycomb will keep a long time. Anyhow, cut up the comb into pieces, but do not squeeze out the honey. Those parts of the combs which contain young bees, or are black and dirty, put bye. You may cut them up and press the honey out for your own use.

But it is time to close, so I shall only say good luck to the bees and their owners, and "GOD SAVE THE QUEEN."

(To be continued.)

GIDNEY'S CUCUMBER SLICER—GIDNEY'S HORSERADISH SCRAPER.

THERE are certain minds which have an aptitude for providing things convenient, and Mr. Gidney has such a mind. His "Kidney Bean slicer" is admirable, for it enables even a cook "whose fingers are all thumbs," to cut the beans into slices perfectly uniform; and now Mr. Gidney presents us with two other instruments, one of which cuts Cucumbers into slices thin and uniform, "even in the hands of the most clumsy operator," and the other scrapes Horseradish "to one uniform thickness, excluding those knotty pieces which are usually found when a knife is used." We strongly recommend all these very efficient and cheap instruments.

NEW BOOKS.

THE GARDENER'S ASSISTANT.*—We took up the two parts of this work, which have already appeared, with an expectation that we should find it characterised by great excellence; and we have not been disappointed. We expected such merit, because the author, though he has omitted to state the fact in his title page, has for many years been a most trustworthy officer of the Chiswick Gardens, and ought to have long since been brought into more prominent notice, if for no other acquirement than his great knowledge of fruits.

The work commences with a calendar of operations, required to be performed each month in every department of the garden. This is followed, as far as the work extends at present, with a description of the various parts of plants, and their functions; information relative to the food of plants, soils, manures, tools, and other garden instruments and utensils. The whole is very copiously illustrated with engravings; these are good, but the coloured portraits of flowers are costly and useless.

We recommend the work cordially to our readers, for it will be intelligible to the amateur, and full of information, useful both to him and the professional cultivator.

BRITISH GRASSES.†—This relates only to our Meadow and Pasture Grasses, and will be found useful by those who wish to know the relative value of those grasses as food for stock, and how to discern the species.

THE BEE SEASON AND THE WEATHER.

THE accounts are unfavourable from the hill country, as a great many stocks of bees have perished from the extreme mildness of the winter, and the great consumption of honey in consequence. I wrote a few lines on this subject in February last.

The late sudden change to rainy weather has retarded the swarming in this neighbourhood, as at this time last year we had numerous swarms. I have not heard of any up to this date, and, should this wet continue, the season may turn out a very bad one.

I am pleased to hear that your correspondent, Mr. Tegetmeier, is preparing a new and comparatively cheap wooden box for bees, a thing very much wanted, as most of the pretty fancy hives are beyond the reach of moderate people.

I should very much like to hear from some of your correspondents of their *first swarms* in May and June, 1858.

We have had severe storms of thunder and lightning, which, as they have extended a great many miles *simultaneously*, is generally indicative of a month of very changeable weather, or, perhaps, a break up (excepting a few hot days in June) until the end of July. I trust my prognostic may be wrong.—H. W. NEWMAN, Cheltenham.

[The earliest swarm we know of, near Winchester, came off May 26th.—ED.]

* *The Gardener's Assistant: practical and scientific.*—A guide to the formation and management of the Kitchen, Fruit, and Flower Garden, and the cultivation of Conservatory, Greenhouse, and Hot-house Plants. With a copious Calendar of Gardening Operations. By Robert Thompson. Blackie and Son.

† *The Natural History of British Meadow and Pasture Grasses*, with an account of their economy and agricultural indications. By James Buckman, F.L.S., &c. Hamilton, Adams, and Co.

BEE-KEEPING BY COTTAGERS.

MR. WIGHTON need be under no apprehension of my taking offence at any amount of courteous criticism. He is right in saying that I invited it; and most glad shall I be if any of your readers take sufficient interest in the publication of my "letter" as to think it worth correction. Whatever suggestions I may receive, which in my judgment appear valuable, shall be duly embodied in a note, supplementary to the letter, when the whole of it has appeared in your columns.

In general, I may remark on Mr. Wighton's objections as follows:—

First, with regard to the number of hives to be kept by cottagers, I quite agree with Mr. Wighton, that, "in some localities, there is not sufficient food for the offspring, or swarms, of so many stocks;" that is to say, if any great number of cottagers were to keep bees; and yet I see no reason to alter my words. My experience is certainly in favour of a large addition to the number of stock hives in most parts of Great Britain; believing that an immense quantity of honey is annually wasted, so far as man is concerned, for lack of collectors at those favourable moments when our fitful climate permits it to be accumulated and gathered. I say, then, unhesitatingly, to such cottagers as care to keep bees (always a comparatively small number), *keep a good stock of hives; but so manage them that they shall always be strong enough to survive bad seasons, and make the most of the few weeks of fine weather*, which very few seasons are without.

Secondly. As to Mr. Wighton's objection to my use of the word "old," as applied to the bees got rid of in the plundered hives, this criticism, I think, might have been spared; as it is plain that I did not compare those bees with their like in the old hives, but with the young, unhatched brood in their own hives, of which I was speaking.

Thirdly. A cottager, who wished to save the brood in his hives, would hardly use too much sulphur a second time, if he found the brood injured by an over-dose the first time. I shall, however, "make a note of this," and refer to it again. Whether Mr. Wighton is correct in his surmise, that "larvæ are bred with their mouths downward," and, therefore, might not "come to maturity in a reversed position," I cannot tell. My notion is, that the *larvæ* would soon change their position in search of food. But, be this as it may, the young bees, *ceiled over in the cells* (of which there is usually a large proportion, in hives plundered at the time I mention), would escape all danger on this score.

I see no reason to change my remarks about cutting out honey. A little *judgment* in so doing is all that is necessary. But I stoutly maintain, that in *no* hives, but those accessible at the top, can the honey, which is worth taking, be cut out without destroying *all* the combs; whereas in such hives a judicious, and not too greedy, spoliation will suffer most of the combs to remain secure and uninjured. Again, Mr. Wighton will see that there is no "*must*" in the case, with regard to the brood growing "cold," when he observes that I recommend the swarms to be plundered *not later* than the *beginning of August*. At that season there is usually no great frequency of cold nights, or such a scarcity of bees in the hives, to fear much for the brood. Lastly, *on my plan*, there will seldom be an insufficiency of "stocks to nurse the brood in the new hives;" for those will be *equal to*, or certainly *not* "double the number of the old ones."—B. and W.

QUERIES AND ANSWERS.

VINES WHICH HAVE BEEN LIFTED.

"I have a house filled with Vines, the roots of which I had occasion to lift last autumn, as they had got too deep into a badly-drained border. While the operation was going on, I was obliged to be absent. Bright weather setting in, shading was neglected, the Vines flagging in consequence, preventing that thorough maturing of the wood, and that root-action, which otherwise would have taken place. I might here state, that, returning home before they were all lifted, and shading being applied, a few were kept from flagging, which are now doing well. The others, I regret to say, have broke very weakly,

and are growing only a very little. As the season advances, will they improve much? Or would you advise me to plant young ones in their stead? The border is new."—A CONSTANT READER.

[We should expect the Vines, if kept rather cool, to improve with the season; but, to be doubly sure, we would have young Vines, and grow them on in pots, and, if the Vines did not improve greatly by July, we would plant out the young ones. If you lift early in the autumn, you must shade. In your circumstances, you should have deferred until towards the end of October.]

GROWING MELONS IN A PLANT PIT.

"Will you give me your opinion respecting growing Melons in a pit built for protecting bedding plants. The pit is forty feet in length, divided into four, of ten feet each, and provided with flues. The stokehole is at one end, and the chimney at the other. The flues run one along the front, and the other along the back of the pit; they diverge from the fireplace, which is in the centre of one end, run the whole length of the pit, and then converge, and enter the shaft, which is inside a building, so as not to be seen. The pit is not deep enough to hold sufficient heating materials to grow Melons, being only two feet six inches high at front, and not quite four feet high at back, with no means of lining outside. I thought of placing large evaporating pans all along the flues, and a draining-pipe, two feet long, or more, upright, in each pan, and then covering the pans with the tiles, to keep the leaves, or dung, out of the water. The pans could be filled by pouring water down the pipes, and then, when the flues were heated, steam and heat would ascend through the pipes, which would be in two rows back and front, ten pipes in each row. I thought of placing some small wood over the bottom of the pit, and upon that eight or ten inches of leaves, or dung, leaving room for a foot of soil; the latter to be a foot from the glass, and the pipes to stand with their ends an inch or two above the surface of the bed."—A BEGINNER.

[The whole minutiae of Melon culture were given in late volumes. We do not see anything to prevent your plan acting well, so far as we understand it; only the pans must have little water in them as the Melons approach maturity. There is a want of clearness, however, in your description, which it may be to your advantage to point out, and which would have been at once removed, if, by a few strokes of your pen, you had given an end section of the pit, with the position of the flue. Much of the practicability and success of your proposed mode, will depend on the position of the flues, of which we know nothing further, than that they go, one at the front and the other at the back; but whether they stand above the floor of your pit, or are partly or wholly sunk beneath it, we know nothing. Thus, supposing that your flue in front is above the level of the floor, and that is only two feet six inches from the glass in front; and supposing, in addition, that the flue is one foot or nearly so in height; how are you to place pans for water on that flue; and in these pans fix draining-pipes upright, that are two feet or more in length; and, above that height, have eleven inches more for soil; and then another foot, as you ought to have, to the glass; and all this in a space of two feet six inches, even if we come to the conclusion that that is the height from the top of the flue, and not from the flooring of the pit? Neither is there any width given: though if that was afforded, and we were shown the position of the flue, we could speak more certainly as to general results, and, also, as to your particular mode of placing small wood over the bottom of the pit, with eight or ten inches of leaves or dung above them. Bottom heat is less necessary after the month of June for Melons, but still it is always desirable, when it can be obtained at pleasure and regulated at will. If the heat from your flue cannot circulate among the small wood, then what use can it be. The space would be better filled with nice, sweet dung, to give the plants a start by bottom heat. If the heat does act on that wood, then, instead of small, I would have large blocks of wood and stone, raised to the necessary height, and on that a covering of long straw, or turf, for the soil to rest upon. The stones, &c., once heated would retain it a long time. Sometime ago a similar pit came under my

notice, about nine feet wide, heated as "A BEGINNER'S," with two flues; the top of the one at back being three feet and a half from the glass, and the front one about two feet. The owner had lots of old, stout, unequal rough slabs lying about; and he was anxious to make a platform from these, above the flues, so that there his plants might stand in winter, and Cucumbers, Melons, &c., be grown in summer. The following was the plan adopted:—The slabs were cut to an uniform length, so that, whilst abutting against the back wall with one end, they would rest on the inner side of the front flue with the other. But there was no intention to char them by placing their ends in the flue. Along the flue, at four or five feet apart, two bricks on bed were securely fastened. As the pit was wide, posts, at about four feet apart, were driven in a line longitudinally along its centre; on these posts, and also on these bricks on the flues, stout rails were placed longitudinally, and on these the slabs were placed crosswise; thus supported at the ends and middle. Holes were made at the back, in the slabs, opposite each light, for a drain-pipe to stand up, and to be plugged or opened at pleasure. The whole of the other holes, between the rough slabs, were stuffed with clinkers, stones, &c.; and then something like an even surface made, by spreading rough conereting with a spade. This still left an opening, between the end of the slabs and front flue, of the depth of the two bricks on bed and the rail. Part of this was filled up with rough brickbats; but, as time was of importance, thick turfs were cut wider than the opening, and these turfs jammed in between the flue and the rail. Two thirds of the top of the front flue were exposed; its inner side and the whole of the back flue were thus inclosed in a chamber. Holes were also left at the front, not only to let out heat when desirable, but also for pouring water down into the chamber, which caused it to be supplied with moist air. The flues being capable of being heated separately, by means of dampers from the same furnace, it was easy to make the back flue instrumental for bottom heat, and the front flue for top heat. When deemed advisable, pans placed on the latter gave a moist top heat. When it was deemed 'unadvisable to allow the moist heat to escape from the chamber—when the plugs of the drain pipes were opened—both flues contributed to the heat of the atmosphere of the house. I have previously stated how, by a single flue in the centre, and a chamber over it, or a rough surrounding of large stones, the same object was gained. Perhaps some of these reminiscences may be useful to our correspondent. I should have liked to be more useful to him; but he will still be a gainer if he now clearly sees, that the first step towards securing a clear, plain answer, is to make a clear, plain statement of his case. For instance, if his pit is wide, he might grow other things in it for a time; and get Melons quite as good by giving them a depth of twenty inches, or two feet, of soil, and a width of thirty inches, as if they revelled in a width of five or seven feet.—R. FISH.]

ARRANGEMENT OF HOUSES—HEATING VINE BORDERS, &c.

"I propose to build vineries, and a range of small span-roof houses, as shewn in plan. Will you kindly give me your opinion of the merits of this plan in THE COTTAGE GARDENER, especially as to putting the hot-water pipes under the paving, which will compose the bottom of Vine borders. The rafters of the vinery will be sixteen feet long, at an angle of 45°, or a very little flatter. The Vines to be planted inside. (No front lights). Be so good as to notice the *air drains* opening under hot-water pipes. The rafters will be one yard apart, and the Vines trained on the spur system between them. The front wall will be on arches?"—G. H. A.

[In addition to your statement, to save giving your rough plan, I may mention, that two vineries facing the south—each twenty-four feet by twelve, length of rafter sixteen feet, at an angle of 45°, and the base-end near the ground surface, and there being no front lights—are furnished with borders twenty feet by sixteen feet, with a walk in front of them. Beyond the walk the boiler is placed, and beyond that, and opposite the centre of the united border, a span-house goes farther south, twenty-four feet by twelve, and nine feet in height, and the houses are heated from that boiler. I will now notice the peculiarities, and thus, so far, answer your questions.

1. *Paving the bottom of Vine Borders.*—This I consider an excellent plan, where there is danger of the Vines getting deep into uncongenial soil; but, unless they are laid so hollow, that the moisture can easily pass through them, I should wish to have from four to six inches of rouble upon the top of them, with a good drain in front, in order that no stagnant moisture may be retained in the soil above. I should prefer this to having the flagstones laid open; as, wherever water can easily get through, roots will also penetrate; and, unless the vacuity below should be deep—say two or three feet, instead, as yours seems to be, of merely so many inches—the roots will pass through the fissures of the stones, and get down in dry seasons into the uncongenial subsoil, and your whole trouble and expense of flagging or paving would go for nothing. In examining Vine borders so made, I have found the roots got too easily down. If, therefore, I went to the expense of paving, I would wish to have the joints close, rouble above, and a good drain in front. Few gardeners could manage to get such a thing done. One of the most perfect things of the kind was constructed by Mr. Mackie, the very able gardener at Kingston Hall, near Derby; but there is an open chamber below; that chamber is heated by pipes, as you propose; and the heat from that chamber is admitted into, and shut out from, the house at pleasure; a house which, when I saw it some years ago, was one of the finest sights, as respects grape culture, I ever witnessed.

2. *Heating the Border with Pipes.*—It will, therefore, be evident, that I have no objection to your flow and return pipe passing beneath your border; nor should I have any objection if that piping was doubled, though it would be desirable to have the means of shutting the heat off when you merely wished to exclude frost from the house. The deep drain would be the next best thing to a chamber, and, of course, the bottom of the border so constructed that the heat would permeate all the way underneath it. In such circumstances, it would be advisable to have openings, to admit air beneath the border, and other openings communicating from beneath the border with the house. This would always, when deemed necessary, give you a supply of heated and moistened air.

3. *Danger of Pipes Freezing.*—If you sink your pipes, as you propose, they will be more than twenty inches from the surface; but, if even at that depth they should be freezed to bursting, there will be some danger of rupturing the Vine roots above them. Why not secure both, by placing a little firm, loose, long litter, or even evergreen branches, or other covering, over the border for the winter?

4. *Giving Air.*—Your mode of having openings in the front of the house, passing down through the border, and rising immediately under the four pipes which heat the house, and are placed not far from the front of the house inside, is a very good one; but still the idea suggested in the last paragraph might also be carried out. These pipes should be perfectly clear of the border. At present, they are seemingly sunk considerably below the level of the inside border. The heat will not tell quite so quickly as if the pipes were above it. *The air-giving at top is all right.*

5. *Circulation of Air.*—Allowing your pipes to remain as they are—supposing you had openings at the back of your house inside, every four or five feet, and drains beneath your inside border, running across, until they opened just below your hot-water pipes—it would be next to impossible to have stagnant air in any part of your house, when the weather forbade the propriety of introducing much fresh air from the outside. It is seldom that gardeners can get such things done; but, in new jobs, the extra expense would not be great. The Polmaise principle would thus so far be brought into operation. The air near the pipes would be heated, and expand and rise; colder and moister air would be drawn from the drains, to supply its place, and the colder and drier air would just as regularly find its way to the openings at the back of the house; and thus there would be continuous movement whenever the pipes were heated.

6. *Planting Inside.*—This has many advantages, and especially with such a house as yours. A great weight of grapes can be obtained from such a rafter, going at once from the ground to the top of the wall; and, at such an angle, grapes can be grown well early or late; whilst, in the case of the latter, they will have every chance to keep well, as the danger from drip will be greatly minimized.—R. FISH.]

SHORTENING AND REMOVING THE LATERALS OF VINES.

"Last autumn, I planted my Vines, three years old, from pots, outside the house. At the beginning of March, I started them. Some have made shoots six feet long, and near half an inch in diameter. I removed the laterals as they appeared, thinking to promote the strength of main stem. I now find that they are pushing out fresh laterals by the side of the buds. Will this injure the bud for next year? Shall I continue this close stopping? Will the rods require to be cut back next pruning, and, if so, how far?"—W. Z.

[Removing laterals does not add to the strength of the stem. Look at a common young tree, remove all its side branches, and leave it merely with a leading shoot: do you expect the main stem will be as large as if you had allowed short twigs to clothe it all the way? To get the greatest bulk of timber from a tree, give it plenty of room, and let it expand freely on all sides. This would, however, give weight of timber, but not weight and extra utility in the main stem or trunk. Hence the shortening and pruning, to concentrate as much as possible in the main stem. Thus we shorten laterals on a Vine stem, to encourage size of stem, that the lateral may be a feeder and not a robber; and, as lately explained, we remove these laterals toward autumn altogether, when maturity of the wood is of more importance than mere weight. Let the laterals, that now come, grow and remain for a couple of months, stopping them beyond the first joint; and, when they push and grow again, stop at the next first joint made; and let that be the first removed in the autumn. From your description, we would cut down your canes next autumn to a third or so of their length. Keep in mind, that much fruit early paralyses a Vine for ever. I have taken a full crop of such rods as yours—say from twelve to eighteen bunches—but they did little good afterwards. Telling the cause of, and not concealing failures, are quite as useful as detailing successes. Be assured, that allowing a lateral to come now from the side of a bud will not injure it. Supposing your Vine growing on vigorously to the end of the summer, if you had fine main leaves at your buds, and also a large-leaved lateral, and allowed these latter also to remain, then, as previously explained, you might have strong wood, but not matured, and small pointed buds instead of nice plump round ones. Therefore, in autumn, we speak of gradually removing the laterals, in order not to assist the growing but the ripening process. The mere size of a Vine stem, independent of age, is no criterion as to length or fruiting. Yours may be as thick as your finger or thumb before winter, and, if the wood is well ripened, it would show fruit next year from top to bottom, but would be injured afterwards. Some would keep it nearly all the length, allow it to produce side shoots regularly, and take only four or six bunches, cutting all the rest away. Most people would cut it down to the length of a third of the rafter, and only fruit it all the length about the third year, and that, though slow, would be the surest mode.—R. FISH.]

EARLY FLOWERS FOR A COLD GREENHOUSE.

"It would oblige me—and, perhaps, others also—to have a list of perennials, annuals, and bulbs, that (with the exception of the month before the flowering of the Crocus, I suppose) would keep tolerably gay in a greenhouse without any artificial heat, with the assistance of a cold frame, for storing the plants till on the point of flowering.

"There seems a greater difference, in even varieties of the same flower, in suitability to greenhouse culture than I was aware of; as, out of twenty varieties of early Tulips, I have only been successful in two or three."—W. M. G.

[Keeping your circumstances in view, we would mention the following:—

Perennials.—*Dielytra spectabilis*, double Wallflowers, Cinerarias, Calecolarias, scarlet Geraniums, Cyclamens, Musk, and other Mimuluses; *Campanula pyramidalis*, and others; Violets of kinds; Chinese Primulas, Polyanthuscs, Anemones, &c.

Bulbs.—Hyacinths, Narcissuses, Jonquils, Tulips, Crocuses, Snowdrops, Dog's Tooth Violets, *Leucojum vernum*; Scillas in variety; Oxalis, various; Gladioluses in great variety; and Liliums of the Japan kinds.

Annuals.—Balsams, sown in spring; Schizanthus, Mignonne, Stocks, sown early in autumn; and almost every hardy and half-hardy annual.

Among shrubs, Fuchsias, Cytisuses, and Daphnes; and even Camellias and Azaleas may hold a prominent place, if due protection is given.]

CULTURE OF WEIGELA ROSEA AND CLETHRA ARBOREA.

"Having a plant of *Weigela rosea* in full flower, I shall be much obliged for instructions, after it has done flowering, how to prune it. As the flowers are all at the ends of the shoots, and the branches are very long from the main stem, I wish to know if the plant may be pruned, after flowering, as it is so straggling.

"I have a plant of *Clethra arborea*, which is not flowering this year; it is making good wood. May it be brought out, as Myrtles or other greenhouse shrubs?"—M. F.

[Do not be afraid to prune out the shoots that have flowered, when done flowering, but encourage the young shoots showing. Give plenty of water in summer, as we presume the plant is in a pot, and give plenty of unobstructed sunlight in autumn, to get the shoots ripened earlier. It is quite hardy near London.

Place the *Clethra arborea* out of doors in June, and give it plenty of sunlight, and it will give you plenty of flowers next season.]

TREATMENT OF CHINESE AZALEAS AFTER BLOOMING.

"Please to tell me what is the best method of treating my Chinese Azaleas when out of flower, so as to make them bloom every year, instead of every second year, which is what mine usually do; also, whether they should get much water while in flower and after, that is, be well watered every day, or every second or third day. They are now in full bloom, having been in a cool greenhouse all the winter, but I could give them some heat. The plants do not look vigorous, though full of flowers, as the leaves were brown. Should they be plunged in the open air during the summer, and how long? Will the little shoots, such as I send, answer for cuttings; and, will it be too late to plant these cuttings a month or two hence, as only the white ones have made shoots as yet?"—JANE.

[We are very loath to disoblige a lady, but much space would be saved, if some of our fair friends, and unfair friends too, would turn up some of our indexes now and then. The whole minutiae about watering, will be found in late volumes, and, perhaps, more especially in an article on Window Gardening: it would take a column to condense it. Azaleas must, just like other plants, be watered when they want it; but, generally when in flower, they require a fair portion. Specifying any time would just lead our questioner astray. As soon as the flowers fade, clean them all away, and all remains of seed pods, and syringe the plants all over, and well; and, as you can give them heat, keep them closer and warmer, until the young shoots are growing freely. Then gradually give more light, and more air; and then, about August and September, expose them fully to the sun, in an open house, or a sheltered place out of doors, keeping the pots from the sun, not the tops, and housing by the end of September, or the first ten days of October. When the shoots are from an inch and a half to two inches long, and just cut off where the older and the new growth meet, is a good size for cuttings. Place them in silver sand, over sandy peat, in a pot three-parts filled with drainage, and covered with a bellglass; and keep the pot close and warm. The sooner they are in the better, though they will do for a month to come. If not rooted early in autumn, it will be best to allow them to remain in the cutting pot all the winter. If rooted by the middle of August, repot in sandy heath soil, either one in a small pot, or three or four round the sides of a four-inch pot. The latter is the safest and best for beginners. The established plants will flower none the worse for being rather cool, if safe, in winter. Heat is most wanted when they are making their fresh wood.]

TO CORRESPONDENTS.

DISTORTED POTATO (*George Brown, Camberwell*).—Your letter is not authenticated, else we should publish it; but the boy ought to be well caned. There is no credit due for deceiving any one, and we cannot believe him through you, because he has deceived a more knowing person, viz., Dr. Lindley, into publishing a falsehood about a Potato two feet long. There was nothing strange in the long Potato figured by a contemporary, from a false drawing of a Potato six or seven inches long. It was a common case of morphology, and, whether it was two inches or two feet long, made not the slightest difference in explaining the sport. We can conceive a case, in accordance with this freak of morphology, in which a Potato may grow to five or six feet long, like a shoot of bramble running underground. But we cannot conceive the use of raising young sprigs into heros, for playing pranks at deception.

SICKLY GERANIUMS (*C. J. S.*).—We cannot perceive any insect on the leaves. We think it probable that the sickly appearance arose from the cold and unfavourable state of the roots, from having been kept too wet, owing to imperfect drainage, and in some unfavourable situation.

BIRDS EGGS (*A. B.*).—We believe that the insects infest the isinglass glue which you employed. Copal varnish used instead of glue does not harbour acari or mites.

GRAFTING ON OLD WILLOWS (*C. C. M.*).—You may graft upon the branches which have issued from them; but as you do not mention what you wish to use for scions, we, of course, give no opinion upon that point, nor upon the proper time for performing the operation.

APPLE BEETLE (*A. Gardener*).—The beetle, or weevil, called locally "the chovey," which eats your young Apples, is, probably, *Cureulio baeceus*. There is no remedy but spreading a sheet beneath the tree, and shaking the branches. The insects falling into the sheet are easily collected and destroyed.

MILDEW ON ROSES (*A Subscriber, Liverpool*).—We do not feel certain that your Roses suffer from the true mildew—parasitical fungi. Try mulching the roots, and watering with liquid manure.

VINES IN POTS (*A Subscriber*).—Young Vines, when the fruit is swelling, require considerable nourishment, and the leaves are apt to cup if it is withheld. We incline to think that you had allowed them to get too dry. Syringe, shade a little in bright sun, and give warm manure waterings.

NAMES OF PLANTS (*I. H. B.*).—Yours is one of the *Brunfelsias* of the *Cottage Gardeners' Dictionary*, which is often called *Franciscea*. The small specimen sent is like *Franciscea acuminata*. They are all stove evergreen shrubs. By keeping them growing in plenty of heat and moisture, with proper attention to potting in rich, lumpy, fibry soil, with a little silver sand mixed up with it, they are, more or less, in bloom all the year. The *Torenia Asiatica* delights in plenty of heat and moisture during the season of growth. (*C—, Munster*).—The plant inclosed is the *Ribes aurea*, or Golden-flowered Currant. The *Calla Aethiopica*, is called, in the *Cottage Gardeners' Dictionary*, and other modern works, *Richardia Aethiopica*. (*M. D. P.*).—Your plant is the old *Sophora tetraptera*, or Winged-podded Sophora, but now called *Edwardsia grandiflora*, a singularly beautiful plant, suitable to the conservatory wall. (*W. Watson*).—Your plant is the *Asarum Europaeum*, the common Asarabacca, a rare native plant. (*Z. A.*).—Your plant is, we believe, one of *Mitellas*, but uncertain what species, unless it be *M. trifida*. (*J. P—, Boroughbridge*).—Your plant is the *Vaccinium Myrtillus*, or Bilberry; frequent in stony woods and heaths. (*W. K. Bridgman*).—It is quite impossible to assist you in naming your Yuccas, from mere diminutive sketches, and single leaves. We know most of them when we see them, and without seeing them we cannot help you. (*Hanie*).—The Geranium seedling is the *Pelargonium tomentosum*, or Pennyroyal Cranes-bill. The seedling Verbena appears to be of good substance, but, as near as we can judge, nothing very striking in its colours. (*J. N.*).—We answered you last week. Yours is the Snowdrop Tree, *Halesia tetraptera*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

- JUNE 2nd, 3rd, and 4th. BATH AND WEST OF ENGLAND. *Sec.*, Mr. John Kingsbury, Hammet Street, Taunton.
- JUNE 9th and 10th. BEVERLEY AND EAST RIDING OF YORKSHIRE. *Sec.*, W. W. Boulton, Beverley, Yorkshire. Entries close on the 1st of June.
- JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. *Sec.*, Wm. Henry Dawson, Sheffield.
- JULY 8th. PRESCOT. *Sec.*, Mr. James Beesley.
- AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. *Sec.*, W. Houghton.
- AUGUST 18th. AIREDALE. *Hon. Sees.*, J. Wilkinson and T. Booth, Shipley.
- OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.
- NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.
- DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, Woolshops, Halifax.
- JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.

GOLDEN MOONIES.

"WELL, well, well, Mrs. Thingumbob, we do not pretend to be always instructive; but we endeavour to amuse."

"Don't tell me. With all your nonsense about the hippo-

potamus, and such stuff. I don't believe it. We never heard of them when I was a young woman; and then your Mrs. Harris and Sairey Gamp. I don't believe there ever were any such people; and it's no better than telling lies to invent any such nonsense."

"Well; but——"

"There you go again. But I tell you it is *not* well."

"But, my dear Madam, you will, I hope, allow, that instruction may be conveyed through the medium of light reading, and many ridiculous and antiquated ideas may be attacked more successfully in that way than by serious argument. Take, for instance, the preposterous notion, that it is unlucky to put an even number of eggs under a sitting hen."

"Preposterous notion, indeed! I should like to see the person who ever had any luck with an even number! Now, let me tell you something about it. It was—let me see—in the year—well, never mind the year—it was just before—no, I don't think it was—yet, it wasn't after—well, it was about that time, then; the date is not important, and yet it is, that I may know whether you call it antiquated; well, it was either in the reign of George the Third, or George the Fourth—and yet I am not sure it was not the beginning of William the Fourth—that I had some fowls. They were—let me see, what were they?—they were not Spanish, for they weren't black; they were not Dorkings, for they hadn't five claws; they were not Game, for they had double combs; they were not Polands, for they had no top-knots; they were not Cochins, for they were not known; they were not Brahmas——"

"Well, what were they?"

We listened with somewhat anxiety for the description of the birds. Our companion was one for whom we have the highest respect. We do not know her age, we guess it at seventy. She is still tall and upright, reads the paper without the aid of glasses, and walks briskly about her garden and poultry-yard. She has a bright eye still, and a faultless, aquiline nose. She is thin and active, and when cheered by her favourite topic of poultry, and other accessories of a rural residence, she might disclaim a score of the summers that have passed over her. Her weak point, is a belief that everything has degenerated since the days of her youth; and, from being told she is a wonderful woman, she at times almost imagines she is twice as old as she is in reality. She is accused of using the least possible notion of rouge, and she takes two pinches of highly scented snuff, from a tortoiseshell and silver box, after dinner and after supper. Her relations were all sporting men, and being rather of a masculine turn (this may account for her remaining single), she gained much knowledge that is often considered "irregular" for a lady. She admits having witnessed a cock fight, but it was many years ago, when she was the "toast" of her part of the county. She has been called a witch, but it was a "Lancashire Witch."

"Well," she said, "I recollect, the fowls were *Golden Moonies*."

"Can you describe them?" asked we. "Oh! yes. I can see them now. I particularly recollect one pen; it was given me by—but never mind who by. I had particular reasons for liking that pen of birds. The cock was not a large, but he was a beautifully-shaped creature. He was well-proportioned, and everything about him was symmetry. His head was round, his face a bright red. His comb, ample and full of points, sat firmly but lightly on his head, and the pike behind turned upwards, just as if it were to complete the independent, not to say the saucy, character of the bird; his wings barred and laced correctly; not only when viewed as a whole, but every feather would bear inspection and criticism; his tail ample and flowing, his tail-coverts brilliant in colour; his saddle rich and dark; his breast spangled all over; his hackle of a rich deeply-shaded colour; his body round and full, breast slightly protuberant; and his pretty deaf-ear of frosted silver." "You do not then," said we, "approve of hen-tails? But let me ask, also, do you approve of most of the combs you see in the present day?"

"Tut, tut—no," said the old lady; "nothing is so good now as it was when I was young. Hens' tails have no business on cocks' bodies; and they are monsters. Combs were not made to stop the breath, or close the eyes, or cause the death of cocks: and yet you young men of the present day

have bred your birds till they are deformed by what you consider desirable. Give me a moderate comb, one that adds to the beauty of the bird, and that he carries jauntily. It should not overhang anywhere; and judges should be firm, and not try to please every one. And my hens—I wish I could show them now to amateurs—their round, full bodies, well-shaped and well-carried tails: oh! how beautiful they used to look—their smart red combs, firmly set on their heads, their brilliant white ears, their spangled bodies, not here and there a feather, but every one accurately mooned: and their colour, not the sickly, dirty yellow we now see so often, but the rich, dark, lustrous chestnut, unvarying in shade, and regularly mooned: and their legs blue, as if painted: and, mark me, no white spots or black patches;—no long, raking frames, partially redeemed by correct plumage; all was in harmony. I have shuddered at some I have seen. Oh! one cock haunts me; shaped something like a Malay—well marked, I grant you—half a tail, and such a comb, it overhung both nostrils and eyes. There, there, I have done for to-day.”

BIRMINGHAM SUMMER POULTRY SHOW.

THIS Exhibition has been organised by a few amateurs, with the intention of holding such meetings annually, and was not in any way connected with the December Exhibitions, as hitherto taking place in Bingley Hall.

Their first effort has proved most satisfactory; the collection of fowls has shown an amount of competition which even the most sanguine of the projectors scarcely anticipated, more especially when it is remembered, that most amateurs object to exhibit poultry during the height of the breeding season.

On this occasion, only the upper tier of poultry pens were occupied, and, consequently, no complaint as to inequality of advantages among the rival poultry could possibly be urged, even by the unsuccessful.

The regulation, as laid down on the prize-list first issued, was rigidly adhered to: “no Committee-man, feeder, or, indeed, any individual whatever,” under any pretence, had access to the Judges during their deliberations. The gentlemen appointed to officiate for Poultry were Messrs. Challoner, of Worksop, Notts; and Mr. Edward Hewitt, of Spark Brook, Birmingham; the last-named again affording his gratuitous services, as on former meetings of the original Society. T. J. Cottle, Esq., of Cheltenham, awarded the premiums to the Pigeons; and Mr. Hy. Child, of Birmingham, fulfilled similar duties in the Rabbit classes.

As regards the poultry generally, not only were the specimens of first-rate quality, but, as a whole, the “condition” of the birds was far better than we expected. We now proceed to a few general remarks on the classes.

The *Spanish* were excellent, and the competition universal; the merits, therefore, of the winning birds, was of far higher character than usual. The *Dorkings* also were exceedingly good: the first prize, “coloured,” being worthy of especial mention, not only on account of their extraordinary size, but their peculiar freedom from coarseness, so difficult to attain in rosy-combed fowls of this variety. They were the property of the Honble. W. W. Vernon, of Wolseley Hall. The *Silver Grey Dorkings* were a new class to Birmingham schedules, the prizes being monopolized by Mr. Wm. Bromley, of Smithfield, Birmingham, with fowls of immense proportions. Some Dorking chickens, belonging to Miss Steele Perkins, of Sutton Coldfield, were by far the best we have yet seen so early in the season, and actually carried away a third premium from the midst of their adult rivals. All varieties of *Game* fowls were particularly well represented, and, for the time of year, their condition was most praiseworthy. Most of the best breeders in the kingdom competed, and, by reference to the annexed prize list it will be seen, never were premiums so widely disseminated. The *Cochins* were first-rate classes, and we noticed how greatly improved all the pens exhibited were, to those we have been accustomed to meet with of late years. The *Brahma Pootra* class was also much better filled than heretofore. The Golden, and likewise the Silver *Polands*, were excellent; the highly reputed birds of James Greenall, Esq., of Grappenhall Hall, taking the first premium in either variety. The Black *Polands* were, on the contrary, scarcely an average, but the next class in order (*Malays*) was un-

rivalled. In *Hamburghs*, the Golden varieties were far superior to the Silver, the former classes containing specimens leaving little to be desired, and attracting much attention from the visitors assembled. The class for *any other Variety of Fowls* was very indifferent, consequently two of the prizes were withheld altogether. The *Game Bantams*, whether in pens of three, or as single cocks, exhibited the marked improvement ever consequent on careful breeding, and were generally admired; almost every variety of Game-colour being well represented. The Black Bantams were excellent, but the *Sebrights* far inferior to those of prior years.

The *Geese* and *Turkeys*, though limited as to numbers, were highly commendable birds; but in the *Turkeys* (very unfortunately for their owners) some accidental delay on the rails prevented the best pens reaching Bingley Hall until after the prizes were awarded, which obviously bereft them of the distinctions otherwise their due.

The *Pigeons* were the best collection yet got together at Birmingham. The *Rabbits*, too, were not without great merit, and had a fair share of public attention.

The Hall contained a profusion of flags and banners, open for hire at the approaching visit of royalty to Birmingham.

It is simple justice to record, that every possible care was taken of the valuable collection committed to the care of the managers of the Show; and, we believe, not one single death occurred up to the time of our writing these particulars. The unvarying courtesy and respect shown to all parties by the Committee is also well worthy of commendation.

We cannot conclude without suggesting that a longer notice to amateurs of the approach of this Show would have tended materially to the increase of entries.

SPANISH.—First, Third, and Fourth, J. Busst, jun., Walsall. Second, S. H. Hyde, Moss Cottage, Ashton-under-Lyne. Highly Commended, W. M. Lilly, Monyhill Hall, King's Norton; Lydia C. Stow, Bredon, near Tewkesbury; J. K. Bartrum, Bath. Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley; G. Hopwood; J. Busst, jun., Walsall. (An excellent class.)

DORKING (Coloured).—First, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, W. M. Lilly, Monyhill Hall, King's Norton. Third, Miss S. Perkins, the Cottage, near Sutton Coldfield. Fourth, C. H. Wakefield, Malvern Wells. Commended, M. Amphlett, Church Leuch Rectory, Evesham; Mrs. Hanbury, Leamington Hastings, Rugby.

DORKING (Silver).—First and Second, W. Bromley, Smithfield, Birmingham. Highly Commended, H. W. B. Berwick, Helmsley, Yorkshire; H. Child, jun., Sherbourne Road, Birmingham. (Superior class.)

DORKING (White).—First, J. Robinson, Vale House, Garstang. Second, J. Jennens, Friary, Handsworth. (Superior class.)

GAME (Black-breasted and other Reds).—First, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, W. Ballard, Woodcote Lodge, Leamington. Third, A. Sutherland, Burnley, Lancashire. Fourth, G. W. Moss, the Beach, Aigburth, near Liverpool. Highly Commended, J. T. Edge, Strelly Hally, near Nottingham; Miss E. S. Killingly, 51, Herringlow Street, Burton. Commended, W. and J. H. Parkes, Wellington Place, Highgate, Birmingham. (An unusually good class.)

GAME (White and Piles).—First and Fourth, F. Sabin, Bull Street, Birmingham. Second, T. H. D. Bailey, Ickwell House, Biggleswade, Bedfordshire. Third, S. Matthews, Chelton Hall, Stowmarket, Olinckirk.

GAME (Duckwings, and other Greys and Blues).—First, J. Brown, Pole Street, Preston. Second, A. Sutherland, Burnley, Lancashire. Third, W. Dawson, Selly Oak, near Birmingham. Fourth, T. Wilkes, Packwood Haugh, Hockley Heath. Highly Commended, G. W. Moss, the Beach, Aigburth, near Liverpool.

GAME (Any other variety).—First, Bullock and Rapson, Leamington. Second, Rev. T. E. Abrahams, Bickerstaffe, Ormskirk. Third, W. Dawson, Selly Oak, near Birmingham. Fourth, W. Ballard; Woodcote Lodge, Leamington.

GAME COCKS.—First, A. Sutherland, Burnley, Lancashire. Second, Lord Berwick, Cronkhill, near Shrewsbury. Third, G. W. Moss, the Beach, Aigburth, near Liverpool. Fourth, R. Swift, Southwell, Nottinghamshire. Highly Commended, E. Archer, Malvern; S. Rodway, “Woodman” Inn, Pershore Road; J. B. Dixon, 48, Newtown Row, Birmingham; I. Avery, King's Norton. Commended, T. Whitaker, Melton Mowbray.

COCHIN-CHINA (Cinnamon and Buff).—First, J. Cattell, Moseley Wake Green, near Birmingham. Second, T. Stretch, Marsh Lane, Bootle, Liverpool. Third, Viola W. Musgrove, Liverpool. Fourth, R. Chase, Moseley Road, Birmingham. Highly Commended, T. Stretch, Marsh Lane, Bootle, Liverpool; J. Cattell, Moseley Wake Green, near Birmingham; J. K. Bartrum, Bath, Somerset. (A very superior class.)

COCHIN-CHINA (Partridge).—First, G. C. Adkins, West House, Edgbaston. Second, P. Cartwright, Oswestry. Third, J. Cattell, Moseley Wake Green, near Birmingham. Fourth, J. Busst, jun., Walsall. Highly Commended, Viola W. Musgrove, Liverpool; W. M. Lilly, Monyhill Hall, near King's Norton; J. Cattell, Moseley Wake Green, near Birmingham. Commended, P. Cartwright, Oswestry; C. Felton, Erdington.

COCHIN-CHINA (White or Black).—First and Second, R. Chase,

Moseley Road, Birmingham. Third, Sarah R. Herbert, Powick, Worcester. Fourth, G. Whitwell, Kendal. Highly Commended, W. M. Lilly, Monyhill Hall, near King's Norton. Commended, W. E. Taylor, Bredon.

BRAHMA POOTRA.—First, R. Teebay, Fulwood, near Preston, Lancashire. Second, J. K. Bartrum, Bath. Highly Commended, J. K. Bartrum, Bath. Commended, J. Teasdale, Welburn, Yorkshire.

POLAND (Golden).—First, J. F. Greenall, Grappenhall Hall, near Warrington. Second, R. H. Bush, Litfield House, Clifton, near Bristol. Third, J. Dixon, North Park, Bradford.

POLAND (Silver).—First, J. F. Greenall, Grappenhall Hall, near Warrington. Second, J. Dixon, North Park, Bradford. Third, W. Dawson, Selly Oak, near Birmingham. Commended, J. Robinson, Vale House, near Garstang. (An exceedingly good class.)

POLAND (Black, with White Crests).—First, T. Battye, Holmbridge, near Huddersfield. Second, J. Dixon, North Park, near Bradford. Third, J. F. Greenall, Grappenhall Hall, near Warrington.

MALAY.—First, J. Leighton, High Street, Cheltenham. Second, J. Rumsey, 182, High Street, Shadwell, London. Highly Commended, — Lort, Great Heath, near Tenbury. Commended, S. Saunders, 12, Portman Terrace, Globe Terrace, London; C. Ballance, Taunton, Somersetshire; Miss A. E. Dymond, Bolton Hall, Rotherham. (The whole class good).

HAMBURGH (Golden-pencilled).—First, J. B. Chune, Green Bank, Coalbrookdale. Second, T. W. Jones, Wellington, Shropshire. Third, W. C. Worrall, Riec House, Liverpool. Fourth, J. Dixon, North Park, Bradford.

HAMBURGH (Silver-pencilled).—First, Mrs. Parkinson, Roxholme Hall, Sleaford. Second, T. Keable, Rowdefield Farm, Devizes, Wiltshire. Third and Fourth, E. Archer, Malvern. Commended, F. B. Pryon, Bennington Rectory, Stevenage, Hertfordshire.

HAMBURGH (Golden-spangled).—First, J. B. Chune, Green Bank, Coalbrookdale. Second, W. R. Lane, Bournbrook Farm. Third, I. Davis, Bull Street, Harbourne. Fourth, W. S. Davis, 71, Great Hampton Street, Birmingham. Highly Commended, A. G. Waithman, Halifax; H. Carter, Upper Thong. Commended, W. R. Lane, Bournbrook Farm. (A superior class).

HAMBURGH (Silver-spangled).—First, W. M. Lilly, Monyhill Hall, near King's Norton. Second, R. Teebay, Fulwood, near Preston, Lancashire. Third, J. B. Chune, Green Bank, Coalbrookdale. Fourth, Bird and Beldon, Eeleshill Moor, Bradford. Commended, T. Chamberlain, Thames Street, Windsor; J. Newick, Hinton St. George, Ilminster, Somerset.

ANY OTHER VARIETY OF FOWL.—First, W. Dawson, Hopton Mirfield, Yorkshire. First, J. Smith, Henley-in-Arden.

BANTAMS (Golden-laced).—First, G. C. Adkins, West House, Edgbaston. Second, W. M. Lilly, Monyhill Hall, King's Norton. Third, T. H. D. Bailey, Biggleswade, Bedfordshire. Highly Commended, J. and R. Blackburn, Edward Street Mill, Preston. Commended, Rev. G. S. Mister, Welch Hampton Parsonage, Ellesmere, Shropshire.

BANTAMS (Silver-laced).—First, J. and R. Blackburn, Edward Street Mill, Preston. Second, T. H. D. Bailey, Biggleswade, Bedfordshire. Third, Joseph Chinn, 128, Cregoe Street, Birmingham.

BANTAMS (Black).—First, R. Hawkesley, jun., Southwell, Nottinghamshire. Second, G. Finch, Worcester. Third, J. Choyee, jun., Harris Bridge, Atherstone. Highly Commended, J. J. Horton, 233, Bradford Street, Birmingham; E. Cross, Bolton-on-Dearne, Rotherham, Yorkshire. Commended, W. M. Lilly, Monyhill Hall. (A most excellent class.)

BANTAMS (White).—First, J. K. Bartrum, Bath. Second, Hon. W. W. Vernon, Wolsley Hall, Rugeley. Third, J. Crosland, jun., Wakefield. Highly Commended, E. Cross, Bolton-on-Dearne, Rotherham, Yorkshire.

BANTAMS (Game).—First, T. H. D. Bailey, Biggleswade, Bedfordshire. Second, Lord Berwick, Cornhill, near Shrewsbury. Third, I. Thornton, Heckmondwike, near Leeds. Highly Commended, J. Monsey, Thorne Lane, Norwich. (The class good.)

BANTAM GAME COCKS.—First, G. W. Moss, Aigburth, near Liverpool. Second, J. Monsey, Thorne Lane, Norwich. Highly Commended, W. M. Lilly, Monyhill Hall, near King's Norton; Lord Berwick, Cornhill, near Shrewsbury; J. Crosland, jun., Wakefield; J. Tailby, Hill Street, Birmingham.

TURKEYS.—First, J. Preece, Londonderry, Bedale, Yorkshire. Second, Julia Millward, Newton St. Loe, near Bath.

GESE.—First, J. Preece, Londonderry, Bedale, Yorkshire. Second, J. Dixon, North Park, Bradford. Commended, T. Wilkes, Paekwood Haugh, Hookley Heath.

Ducks (Aylesbury).—First and Third, J. Weston, Aylesbury, Buckinghamshire. Second, Mrs. Seamons, Hartwell, Aylesbury, Buckinghamshire.

Ducks (Rouen).—Second, J. Jennings, Friary, Handsworth. Third, E. A. Lingard, Hawkesley Hall, King's Norton. (First prize withheld.)

Ducks (Any other variety).—Second, J. Dixon, North Park, Bradford. Third, Miss S. Perkins, Sutton Coldfield. (First prize withheld.)

PIGEONS.—*Carriers*.—First, G. C. Adkins, West House Edgbaston. Second, E. A. Lingard, Hawkesley Hall, King's Norton. Very Highly Commended, C. Siddons, Aston Street, Birmingham. Highly Commended, E. A. Lingard, Hawkesley Hall, King's Norton; C. Siddons, Aston Street, Birmingham. *Pouters*.—First, G. C. Adkins, West House, Edgbaston. Second, J. Crawford, 65, Hendon Street, Sunderland. Highly Commended, E. A. Lingard, Hawkesley Hall, King's Norton. *Almond Tumblers*.—First and Second, E. A. Lingard, Hawkesley Hall, King's Norton. Very Highly Commended, G. C.

Adkins, West House, Edgbaston. *Runts*.—First, E. A. Lingard, Hawkesley Hall, King's Norton. Second, W. M. Lilly, Monyhill Hall. *Tumblers* (Mottled).—First, J. Percivall, Clent Villa, Harbourne, Birmingham. Second, E. A. Lingard, Hawkesley Hall, King's Norton. *Tumblers* (any other variety).—Two First, E. A. Lingard, Hawkesley Hall, King's Norton. First, H. Yardley, Market Hall, Birmingham. Highly Commended, G. C. Adkins, West House, Edgbaston. Commended, E. A. Lingard, Hawkesley Hall, King's Norton. *Jacobins*.—First, G. C. Adkins, West House, Edgbaston. Second, W. M. Lilly, Monyhill Hall, King's Norton. Commended, Master J. H. Cattell, Moseley. *Fantails*.—First and Second, G. C. Adkins, West House, Edgbaston. Commended, W. M. Lilly, Monyhill Hall, near King's Norton. *Owls*.—First and Second, G. C. Adkins, West House, Edgbaston. *Trumpeters*.—First, G. C. Adkins, West House, Edgbaston. Second, J. Crawford, Sunderland. Highly Commended, J. E. Mapplebeek, Moseley Road, Birmingham. Commended, W. M. Lilly, Monyhill Hall, near King's Norton. *Nuns*.—First, G. C. Adkins, West House, Edgbaston. Second, J. E. Mapplebeek, Moseley Road, Birmingham. Commended, W. M. Lilly, Monyhill Hall, near King's Norton; E. A. Lingard, Hawkesley Hall, King's Norton. *Turbits*.—First, G. C. Adkins, West House, Edgbaston. Second, J. Crawford, Hendon Street, Sunderland. Commended, G. C. Adkins, West House, Edgbaston. *Barbes*.—First, G. C. Adkins, West House, Edgbaston. Second, J. Percivall, Clent Villa, Harbourne, near Birmingham. Commended, J. Mowell, 38, Neasem's Square, Sunderland; J. Crawford, 65, Hendon Street, Sunderland. *Dragoons*.—First, C. Felton, Erdington. Second, G. C. Adkins, West House, Edgbaston. Highly Commended, Miss E. S. Killingly, Burton-upon-Trent. *Any other variety*.—First, G. C. Adkins, West House, Edgbaston. First, W. M. Lilly, Monyhill Hall, near King's Norton. First, F. A. Lavender, Biddenham, Bedfordshire.

RABBITS.—*Length of Ears*.—First and Second, W. M. Lilly, Monyhill Hall, King's Norton. *Colour*.—First and Second, J. Lawrence, Garbett Street, Birmingham. *Weight*.—First, G. Jones, Lease Lane, Birmingham. Second, H. Beebe, Green Lane, Walsall. Commended, J. Lawrence, Garbett Street, Birmingham.

EGGS NOT INJURED BY TRAVELLING.

As there has lately been much discussion in THE COTTAGE GARDENER, whether eggs will travel uninjured, I am anxious to give you the result of the eggs I have had this year. In March, I received twenty-four Dorking eggs, which, after having travelled 200 miles, produced seventeen chickens, sixteen of which are being reared.

In April, I received fifteen Black Poland eggs from about the same distance, which produced nine chickens, seven of which are alive; and another sitting of twelve Black Poland eggs have just produced nine healthy chickens; these latter had travelled upwards of a 100 miles.

I have had very bad luck this year with the eggs from my own fowls; but a good average of chickens from those I have bought.—C. M. J.

OUR LETTER BOX.

GIDDINESS IN FOWLS (*A New Beginner*).—If you referred to the index of our past volumes, you would find an answer to your query. A small blood-vessel has burst on the brain. The only chance of recovery for the fowl, is perfect quiet, low diet, a cool situation, and plenty of green food. It is usually best to kill the bird, if in condition for the spit. Your other question will be answered next week.

DISEASED FEET.—“A Constant Reader begs to inquire regarding fowls having swellings in the ball of the foot. In the centre of each swelling is a hard, white substance, about the size of a pea. Can you prescribe for this disease? or state the cause? Is it owing to the fowls being confined to a small run?”

[We conclude that your fowls are affected with the disease called *bumblefoot*. We extract the following relative notes from “The Poultry Book” :—“Dorkings are especially subject to this disease. It commences with a small wart-like body on the ball of the foot, attended by swelling. There is little hope of successful treatment in cases of long standing. In the early stages of the disease, we have removed the tumours and cauterized the part with nitrate of silver (lunar caustic) with success. The adoption of low, broad perches, which prevent the bird on its descent coming with violence to the ground, is the best prevention.” Birds in confinement are more tender-footed than those allowed to range; and their general health is less firm. Abundance of green food is the best compensation for want of liberty.


EGGS WITH THIN SHELLS.—“I find the shells of many of the eggs now laying by my hens (Golden-spangled Hamburgs) are very thin. The hens have a good run, but I fancy not sufficient lime to form their shells. Can I give them anything to improve the shells?”—A CONSTANT READER.

[Nothing is better for forming the shells of eggs, when fowls are in confinement, or even when they have a run, than common bricklayer's rubbish, pieces of lime, and of old ceilings. It is an excellent thing to throw down a basketful in their yard, or in the corner of their pens. Their liking for it, and its consequent usefulness to them, may be seen by their habit of picking out the mortar from between the bricks of any wall they can get at.]

EAR-LOBES OF WHITE DORKINGS.—“Would you inform me if the White Dorkings should have white ear-lobes?”—A SUBSCRIBER.

[It is altogether unimportant. If we were called upon for a decided opinion, we should give it against white ear-lobes.]

WEEKLY CALENDAR.

Day of Mth	Day of Week.	JUNE 8—15, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
8	Tu	Anthocereis viscosa.	29.759—29.725	69—47	S.W.	.15	46 af 3	11 af 8	23 af 1	26	1 22	159
9	W	Anthyllis tragacantoides.	29.794—29.759	66—43	S.W.	.10	46 3	12 8	42 1	27	1 10	160
10	Th	Azaleas.	29.589—29.528	67—44	S.W.	.02	45 3	13 8	8 2	28	0 58	161
11	F	St. BARNABUS.	29.085—29.801	68—35	W.	—	45 3	14 8	sets		0 46	162
12	S	Aphelexis humilis.	30.278—30.155	66—31	N.E.	—	45 3	14 8	1 10	1	0 34	163
13	SUN	2 SUNDAY AFTER TRINITY.	30.297—30.206	69—31	E.	—	44 3	15 8	43 10	2	0 22	164
14	M	Aphelexis macrantha.	30.135—29.977	70—43	E.	—	44 3	15 8	10 11	3	0 9	165

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 71.2° and 4.87°, respectively. The greatest heat, 90°, occurred on the 13th, in 1842; and the lowest cold, 34°, on the 13th, in 1849. During the period 125 days were fine, and on 92 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

WHENEVER *water* is necessary it should be given copiously; as slight sprinklings very frequently do more harm than good. Hoe deeply and frequently, leaving the soil light and porous.

ASPARAGUS.—Discontinue cutting; as late and close cutting is one of the principal causes of weak "grass" next year.

CABBAGES.—Prick out, four inches apart, young seedling plants from seed beds.

CARROTS, ONIONS, and PARSNIPS, to be kept properly thinned.

CAULIFLOWER.—The plants now forming their heads to be watered and mulched with short litter, which will cause them to produce close and compact heads.

CELERY.—Plant out successional crops into trenches; to be taken up with a ball of earth, and the leaves to be left entire—not trimmed; to be well watered when planted. If the surface of the soil around the earliest crop is hard, from frequent waterings, it should be loosened, for the free admission of air and future waterings.

CUCUMBERS.—Fresh linings to be applied to the plants that have been bearing for some time; to be cut back, if irregular in growth; to be watered, and a couple of inches of fresh soil to be added; kept close, and shaded for a few days, until they have made fresh growth; and to be sprinkled with water every fine afternoon.

ENDIVE.—Sow for the main crop, and plant out some of the early sowing.

LETTUCE.—Sow, and tie up some of the most forward for blanching.

PARSLEY.—Sow, and thin the former sowings to six inches apart.

POTATOES.—Keep the ground loose between the rows.

POT-HERBS, such as *Thyme*, *Savory*, *Marjoram*, &c.—The seedlings to be planted six inches apart.

TURNIPS.—Sow for a main crop, and thin out the last sowing to six or eight inches apart.

FRUIT GARDEN.

APRICOTS.—Thin finally; nail in the young wood, and destroy the maggot, which, curling itself in the leaves, does them and the young fruit much injury.

CHERRIES.—Net from birds; thin and nail in the shoots full length.

PEARS.—Break off the foreright shoots; thin out small or misshapen fruit; and look out for the maggot in the curled leaf.

STRAWBERRIES.—Peg runners into small pots of strong, rich soil.

VINES.—Remove foreright shoots; pinch off the top one joint above the fruit, and nail up the leading shoots. Employ sulphur on the appearance, or on the suspicion of mildew.

WALL TREES will require frequent attention in pruning, thinning the fruit, and nailing. All the late-planted trees to be watered and mulched; and, if very dry weather, all wall trees would be benefited by a thorough good watering at the roots, and by syringing over-head in the evening. Employ the engine against the green fly as soon as it is seen, as the perfect development of the buds for another season will depend, in a great measure, upon the healthy action of the foliage.

FLOWER GARDEN.

The early-planted beds would be improved by a slight hoeing amongst the plants, to loosen the soil. When pegging down the plants, their points to be directed rather northwards, as the sun will draw them towards the south and upright.

BEDDING PLANTS.—*Ageratums*, *Calceolarias*, and other such comparatively tall-growing bedding plants, to be staked and tied up, to prevent injury from winds.

CARNATIONS.—Tie them carefully as they advance in growth.

CLIMBERS against walls and trellises to be frequently gone over, to tie or nail them in.

DELPHINIUMS, HOLLYHOCKS, PHLOXES, &c.—The shoots, if not already done, to be thinned out, and the stems neatly tied to stakes.

PANSIES.—Continue to propagate by slips and cuttings.

POLYANTHUSES.—Part, and choose for them a shady situation, to be sheltered from north and easterly winds.

WILLIAM KEANE.

THE BEDDING-OUT SYSTEM.

"THE Doctor's" bed, which caused so much talk, both here and in Ireland, last year, was made of *Tom Thumb* Geraniums and white Petunias; and one of the simplest and cheapest ways to get up a white Petunia bed, is to sow seeds of any good white kind about the end of March, in a hotbed, and to take the seedlings to a cool frame, as soon as the heat is telling against them, by giving them spindley legs; to prick them out, four or five together, into small 48-pots, and to harden them, so as to be fit for planting out by the 20th of May. Then to plant the four or five in each pot, as *single plants*, but to squeeze or flatten the ball a little in the planting, to cause it to unite, as it were, with the soil in the bed.

A bed of that sort would thus be soon filled or covered, and if any of the seedlings did not prove satisfactory, let them be pulled up, and still there would be three or four plants to pick and choose from; and one ought to pull up so many of the seedlings, at certain stages in the progress of the bed, till at last there were no more plants left than could find room, and sufficient food to carry on a grand display of bloom for a whole season.

Now, the whole system of bedding out, or of sowing

seeds out of doors, hangs upon that one sentence, "sufficient nourishment and room." The difficulty is, to know the right degree of nourishment. What is a right degree of strength and richness in a soil for a given plant, in one place, might be too much or too little, for the selfsame plant, in another place; and the degrees vary in the same place with the variations of the season. It is not a high degree of scientific skill which makes a man or woman a successful flower gardener, so much as a long practice in one place or situation. But, on the other hand, a long practice on one set of tools, so to speak, renders the most scientific as helpless as the practical on a change of these tools, or circumstances.

The worst part of the old practice, which passes unnoticed, at the present day, is that which relates to *seedlings*—from the Cabbage to the Mignonette. The seedlings are left too long unthinned; and one might leave a bed of seedling Petunias a week over the proper time, on account of company coming to see the garden next week; and some seedlings are never thinned at all. How often do you see a beautiful row of *Nemophila* going off, all in a hurry, or not one quarter so good as you have seen them formerly, or in other places! The seedlings were never thinned out, and that is the worst part of our present practice, as I have just said.

I would always sow thick, and plant thick, if I was sure to have the law in my own hands, to make sure of a speedy bed; but if the after thinning is to be left to a second party, ten to one if it is not left too long undone, and some of it will never be done at all. But, at the present moment, I have a bed of ten thousand seedlings of one kind of new plant—a spring flower, a yellow bedding *Polyanthus*—and you could not put a pin's point between any two of them. They are just "as thick as grass," but they are so purposely. They belong to a large class of colonisers—seedlings which will transplant in lumps, and do well—and I hold it to be true economy to sow all such as thick as they will stand, to save room, and to divide them, as soon as they can be handled, into colonies of so many in the batch; to divide them again and again as they grow up, till at last you have them in groups of four or five, as the white Petunias aforesaid, or singly, if that is more desirable.

The reason for my thick sowing was the want of more room, and the want of knowing whether this *Polyanthus* might, or might not, come true from seeds. If not true, it will be of no use to me, as we have the best collection of *Polyanthuses* in the three kingdoms, at the Experimental. A large packet of seeds, from Mr. Smith, of Harwich, who advertised his superior collection in *THE COTTAGE GARDENER*, added only two kinds which we had not before his seedlings bloomed; but his seeds and his kinds were really good, and, if the ten thousand seedlings should turn out to be true to the parent stock, it will not be one too many.

Another bed of "the Doctor's" was edged with *Flower of the Day* Geranium, and the inside filled with concentric rings of China Asters, in shades of colour. Well, to have this bed, one would need a little patience; but there is no such a thing as patience in a real flower garden at all. Talk of having such a thing in a week or two, and you may as well talk of having it when people are dead and gone; have it on the instant, or say nothing about it. Therefore, in providing for this bed at the Experimental, I see they have filled the inside with two-year-old seedlings of *Delphinium formosum*, which were in flower-bud at the time. They say they will have the "flush" of the Delphiniums first; and, when that is over, they will cut it down to the ground, take it up, and replant it in the reserve ground, where it will throw up again for

cut blooms in October. The time of cutting it will depend on the summer, and the progress of the Asters. The Asters will be grown on a piece of good, open soil, till the blossom-buds are formed; and any time after that, till they are in full bloom, will do to plant them into the flower-bed; and, in the mean time, another crop is being had off the same bed.

The new system of planting promenade beds at the Crystal Palace, mentioned last week, would not answer if the beds were in groups, as before the large conservatory at Kew; but it will look extremely pretty, and be very novel as it is, and quite in keeping with that style of bedding. The fact is, were it not for the intervening circular beds, the oblong beds along the bottom of the centre part of the terrace would be a ribbon on a grand scale, or rather a scarlet sash with a purple stripe down each side of it. The *Tom Thumb* Geraniums occupy these beds in five rows, from end to end, no *edging* being across the ends; and a foot of purple Verbenas on each side. But, in this style, the back-row edging need not to be of the same colour as the front-row edging; if the one was dark purple, the other might be of white Verbena, and that departure would give a better effect. As there is no connection across the ends, the edgings are not edgings to the beds, but stripes, for setting off the richness of the ground colour. But, as I said before, the arrangement should not be attempted in the grouping system, of which there is no example to refer to at the Crystal Palace, the whole there being in the simplest style of the art of flower-gardening. There is no grouping at Hampton Court Gardens, only the promenade system. The grouping at Kew is round the large conservatory, and one group of beds in front of the old Museum;—and that group in front of the old Museum should never be altered, because it is the only good specimen we have in our public gardens, of a very bad design, which no man can ever plant properly, because it is impossible to plant it without looking like a pig with one ear;—and we can refer to it as a good specimen of that system, and, as such, will be just as good to learn from as it would be from the best model;—perhaps better.

Round London the weather for "planting out" was most propitious; dripping and heavy rains alternating with warm, sunshiny weather. Many whole gardens required no after-watering, and now, on the 1st of June, there is ample promise of an early and lasting display of bloom.

The May meetings did not present much novelty for the flower garden, but in June we expect many fine seedlings from the crossing labours of last year. Variegated Geraniums will soon be as numerous as the *Horseshoe* class. *Ondine* is yet the best blue Verbena we have had at the Experimental Garden. Visitors to Kew may look out for a bed of a *Nosegay* Geranium, new to the Londoners: the one which was called *Sanguineum* there last year.

It is somewhat strange, that, after offering handsome prizes for *Nosegay* Geraniums at the Crystal Palace Shows, they should plant so few of that breed out in the garden. They have gone no farther yet than the old *Pink Nosegay*, while in the Experimental we use all the old ones, and some new seedlings. A bed with *Mrs. Vernon* in the centre, with the old *Crimson Nosegay* round, and to be edged with *Jackson's Variegated Nosegay*, would beat any other Geranium bed which they could muster, either at Kew or the Crystal Palace; and yet I used the first two at Shrubland Park twelve or fifteen years back; and the *Sanguineum* of Kew I threw out in 1854, as not good enough for my stock; but still it is a most excellent bedder in that style of flower.

Mr. Fish spoke of *Alma*—the variegated *Alma*—

as doing so well with one of his neighbours, but here we find it as slow as the *Golden Chain*. I have an excellent bedder of the variegated Geraniums, from a friend in Yorkshire, without a name. The flowers are in large trusses, and of a clear salmon colour,—more bright salmon than the old *Globe Salmon*. Mr. Kinghorn's *Lizzy* is the best rose Geranium out. One of my own seedlings, the *Victoria Rose*, is about on a par with it, and we are going to make an exchange of the two for more crossing. I anticipate, or I expect to be able to give an account of, more kinds of really new and good bedding Geraniums next autumn, than I could have done any year since I took up the pen, or the pollen; and the most of them I heard of only; but I have such faith in the breeders as leads me to this conclusion.

No one should be without a bed of *Dennis's Rival*. It is the best telling bed of all the greenhouse Geraniums; and I do not think that any soil can be so strong, or so rich, as to throw it out of bloom and run to leaves.

What a lovely bed *Eugene Duval* would make, if it were a perpetual bloomer, and how the ladies would run after it, as a new colour. All shades of purple, and all shades of crimson, are very scarce yet in bedding Geraniums; while no other shades would more improve the looks of our scarlets, as any one may see with half an eye, when good pinkish shades, as the shade of *Le Titien*, is put alongside with *Tom Thumb*.

It is not true, however, in practice, that strong yellow Calceolarias can be drowned, or spoiled, by being side by side with the best scarlet Geraniums, either on gravel or grass; yet the laws of colour would teach the contrary; but, to hurt one another, they must be on a white or some light-coloured ground. To put colour to colour, or to cut flowers, to see how their colours will agree—as yellow and scarlet, for instance—is very deceptive, unless the ground colour, the natural green of the leaves and grass, is given along with it; and that is how it is so hard to judge how such and such plants would look together in one bed. Therefore, although it is safe to trust to the law of colours in the spectrum, it is not at all necessary to adhere strictly to these laws under a very different system; and I would sooner trust to a good eye, on a disputed point about the colour of flowers, than to the most natural laws, which can only govern the colours when they are given on one uniform ground colour. How would the rainbow look if the sky was as green as grass? The sky is the ground colour, and the degrees of strength, or weakness, of the colours in the rainbow would vary in proportion to the colour of the sky, or ground colour, supposing the sky to be green, or purple, or yellow, or a mixture of the three.

D. BEATON.

MANCHESTER AND LIVERPOOL HORTICULTURAL SHOWS.

[We have been favoured with very lengthy reports of these Exhibitions, but are obliged to decline their insertion, because they insure applications from other country Societies, to have their proceedings reported, and we have no space to spare for them. We extract a portion of what Mr. Errington has sent us, relative to the fruit at the Liverpool Show.]

On the 27th of May was held the first Exhibition of the season for horticultural productions in general,—as propitious a day for the purpose as ever welcomed the votaries of Flora. But, as this far-famed neighbourhood is not particularly noted for a run of fine weather, the Committee had very wisely and liberally provided a spacious new tent, of a thoroughly water-

proof character. This is indeed a step in advance, and augurs well for the future prosperity of their undertakings. As might be expected, the anticipation of security induced many hundreds to visit the show, who otherwise would scarcely have ventured, and the consequence was, that the spacious tent was crowded throughout. At some periods, the good people seemed to be packed rather than promenading; and it became almost impossible to wedge one's self forward on any special occasion.

Some readers may not know that the exhibition is held in the Botanic Gardens, at Edgehill, by permission, I believe, as they have no necessary connection with that Society. The grounds here afford most delightful promenades, considering they are in a somewhat smoky neighbourhood; and the width and boldness of these promenade walks, are such as to afford the utmost facilities to parties who desire to stroll in groups, uncrowded: they will entertain thus an immense number. The number of visitors was very considerable, and our Merchant Princes, with their ladies and families, seemed to form the great bulk of the visitants, as might be judged by the richness of their dresses; and the congregation of beauty plainly showed that the Lancashire Witches had not degenerated. Many a noble specimen, too, of the Lords of the Creation might be seen; for your Liverpool merchant is, in general, a bold-looking, manly, well-developed personage;—a tall race, with a frontispiece in which cautious discrimination and a consciousness of dignity seem happily blended. I should imagine there might be about five thousand visitors, of various grades, throughout the day: but this is a mere off-hand guess; there might be many more. The Exhibition was, doubtless, the best May show that has been held for years; and the rarity and high culture of many specimen plants plainly attested that the floral mania is not confined to the great metropolis; indeed numerous specimens would have done credit to the London exhibitions. Thus much as passing remarks, and, as I have attended them as censor for many years, I may observe, that the Society makes a steady and firm progression.

In Pines, there was nothing extraordinary; although Mr. Jennings, of Knowsley, had a few *Jamaicas*, respectable for the period. *Black Hamburgh* Grapes, although not very large, were perfect in colouring, from Mr. Jennings, Harold Littledale, Esq., &c.: they were very ripe, and in good state for exhibition. There were some very good early Melons, of the hybrid *Cashmere*, and *Egyptian Green-flesh* kinds: they were not large, but appeared to be well perfected. Peaches and Nectarines were not so large as some seasons, but appeared to have had justice done them in the ripening process. To revert for a moment to the Grapes, there was a dish named *Josling's St. Alban's*, said to be notorious for cracking, but not a crack on these: they were not, indeed, "crack" Grapes at all, and, I should say, out of season. One of the jokes of the exhibition, was a fine black Hamburgh Vine, in a pot, with five or six bunches on it—all well ripened and perfectly coloured: the pot being only about eight inches in width and depth. This seemed to puzzle certain amateurs and others exceedingly; and I happened to overhear the following sort of dialogue, between two gents, whose brogue had a strong snatch of the vernacular used in the neighbourhood of tall chimnies. They were amateurs, I suppose; and one at least, by his conversation, had his greenhouse, and dabbled a little in the Grape way. I must call them, for the present, Mr. Wigan and Mr. Bolton.

Mr. Wigan.—"Dost see this Grape, lad: these gardeners go ahead of us. Why, I had some last year

in pots, above a foot in diameter, and they had midden water regular, and they did na colour for aw that; and folks said they were na well fed,—the pots were na big enough.”

Mr. Bolton.—“Hold fast, Wigan, there’s a bit of gammon here: if thee’l wait a bit, till the crowd has got by, we’ll ha’ a peep, mon, and I think I can show thee summut.”

So, the coast being tolerably clear, Mr. B. nudged his friend W.; and in the twinkling of an eye Mr. B. had lifted the pot up the pillar to which it was attached, and, being clear of the bench below, he desired Mr. W. to thrust his finger in the hole of the pot and report.—“What is there i’ the bottom, Wig.?” “Why, nowt, mon, but a stump.” “What, no crocks, Wig.?” “Nowt o’ sort, Bolt.” “What then?” “Why, a ruck o’ moss, mon, and a stump-end.” “But what about this stump-end, Bolt.?” “Whoy, I’ll tell thee, lad; but I mon clap the pot down; there’s a power of folks coming this way. I’ll tell thee how ’tis. They select a shoot in spring from a strong Vine, before they force,—one they’re sartain about fruiting: they prune him, and then drag him through the hole, leaving several strong eyes above the pot: then they clap a ruck of moss in the bottom, and fill up with rich soil, and tether the pot safely: when t’exhibition day comes, they ‘cut his cable’ and launch him; and he is taken by the majority for a fast sailer, although nothing but a cock boat.” “By gum, Bolt.,” cried Wig., “there’s tricks i’ all trades, and no mistake.”

And, indeed, as far as appearances went, Bolton might be right, although I cannot vouch for the accuracy of the opinion: however, the Grapes were very fine. There was a dish of nice early *Duke* Cherries; and, strange enough, a dish of Tomatoes, quite ripe. The usual amount of Gooseberries, Currants, &c., were dished, and lots of huge bundles of Rhubarb, which would serve for police truncheons. The Mushrooms were in quantity, and very fine for the period. Asparagus fine; some Kidney Beans, with lots of specimen Onions, Parsley, and other things. Several dishes of Peas were on the table, but whether forced or imported I know not; I suspect the latter. Lettuce pretty good; Kidney Potatoes very good. Cucumbers several dishes: the *Favourite*, by David Auchterlony, appeared the best. There were also vegetables in collections.

On the whole, the benches here reported, although respectable, were not particularly striking; but one must take into consideration the character of the past winter and spring in judging these things, as also the keen climate the neighbourhood is notorious for. In superior forced vegetables, they certainly do not cut an extraordinary figure for so wealthy a neighbourhood; here is room for much improvement. Fruits, also, as they are almost everywhere, are not so much looked after as flowers; and this is somewhat strange amongst such an utilitarian class as the Liverpool gentry. In taking a rough glance at the exhibition tables in the lump, it may be readily seen, that not a tithe of the appliances are awarded to fruits that are given to flowers. However, these remarks are suggestive rather than complaining, for, after all, people will have their hobby. Besides, there is one reason which of itself may in great part account for this preference. When we get nice ripe fruit we eat them; whereas, fine Azaleas, Ericas, Roses, &c., continue to gratify the mental palate days and weeks after they are ripe, to use a fruit term.

One thing I would here remark on, a fact that must have attracted the attention of many: it is the sad confusion that occurs through a want of method in the visitors traversing the tents. Many hundreds in a

tent at the same moment, in fact a crowd, passing to and fro in all directions,—as far as squeezing and treading on the ladies dresses could accomplish it,—is by no means a seemly affair, or convenient to those who love order and decency, to say nothing of politeness. I was remarking on this to some most respectable persons, who live in or near Liverpool, and they assured me that the worthy Secretary had done what lay in his power to establish a better order of things, but found it extremely difficult to carry out. Now, these things are far better managed in London, as our readers very well know: the arrows indicating, with the aid of a few well-informed police, the course most desirable for the common-weal. I do think that the gentry of so polished a town as Liverpool, would appreciate most fully a change of the kind, and also believe, that, if they would take up the matter and exert their influence, the regulation would be accomplished. If such should appear to them desirable, and these remarks should meet the eye of every well-wisher to the Society, I live in hopes of seeing amendment in this respect; and no one would rejoice more, I am assured, than the Secretary himself.

I cannot close these observations without bearing testimony to the care of Mr. Leatherbarrow over the Society, as far as he is connected with it; but he is a lover of good gardening for its own sake, a very necessary qualification for the Secretary of an Horticultural Society. Long may the Liverpool Shows prosper, and make progress as they have hitherto done.

R. ERRINGTON.

SUITABILITY OF NEIGHBOURHOODS FOR PARTICULAR CROPS.

THE most careless observer, travelling northward from London, in the dry months of June, July, or August, cannot miss observing the gradual transition from sun-burnt meadows and pasture fields to moderate freshness, and eventually profuse luxuriance. This change is certainly more perceptible than that of a similar kind, observed in the return journey, when taken in early spring, and where the southern district only has made any progress in growing. These natural conditions of things have their due influence on garden products; and, in some cases, the advantage is on the side of the situation not so well favoured by nature. A northern climate, or cool, stiff bottom, is the most useful in summer, and some of the most important fruits and vegetables like a soil of this description better than an opposite one. Most stoned fruits like a stiff soil; an exception is *Morella* Cherries, which like a dry strong one. Peas, Beans, all the Cabbage and Broccoli tribe, as well as Celery, Lettuce; and many other vegetables, like a loamy soil,—one which will retain part of the juices of manure, or other fluid, which may be given to it. Whereas a dry gravelly one greedily devours as much as ever is given to it, and its porous subsoil allows of its being made the medium of a more efficient drainage than is beneficial for the welfare of things growing there, especially in dry, hot seasons.

Now, the general inference to be drawn from this is, to plant in each district the things most suitable to it. This is advice easily given, but the most unlikely of any to be carried out in private gardening matters; for the wants of a family in Sussex are much the same as that of one in Cumberland, while the natural condition of the two counties are widely different. But a very important difference is often perceptible in places only a few miles apart,—soil and situation making so much difference, that it is plain to every one the same productions cannot thrive alike at each place. Hence

the patent-right, which farmers and other tillers of the soil have for constantly grumbling, is not altogether without its causes. A north country farmer, whose winter fodder is about exhausted in the early part of April, wishes himself and stock transported to the south, where, he is told, the fields are fetlock deep in grass; while, about August, the same may be said of the south country one, wishing his sun-burnt meadows were as fresh and green as some he hears of some half-dozen counties northwards.

A journey by rail discloses this feature more than anything else; and it has often occurred to me, and, I daresay, to others also,—Could the railway not be made available for conveying large quantities of sheep and cattle, in the middle of summer, from the dry, burnt-up districts of the south and east of England to the opposite directions? A similar migration might take place in a contrary way in early spring, or late in autumn; for it often happens that the growth of grass after the middle of September exceeds that before it, in this neighbourhood (Kent), and continues growing until January; there being the last autumn more fresh grass at that time than in August in most places. At the same time, be it remembered, that grass in late autumn is not like that in summer for the purposes of feeding: hence the superior value of grass in those districts where it will grow unscathed, or nearly so, by the midsummer sun, or the dry weather of the dog days.

The migration of cattle has nothing new in it. We are told they do exactly this where left in a state of nature; and birds of various kinds do it with a regularity that is proverbial in many ways; the appearance of the cuckoo, nightingale, and other favourites being almost so well known as to be embodied in the calendar. And we have evidence in Holy Writ of a whole family (the origin of a great nation), with all their cattle and other effects, going down to Egypt at a time of great scarcity.

Now, with our boasted means of easy transit, I hope the day is not far distant when a south country farmer may be able to send his cattle down to Lancashire, and other moist grazing districts, to fatten in summer, and receive them back again in autumn, to finish off at home with the grass he has there. The difficulties in the way might as easily be surmounted as were those of sending the cattle from distant places to London market. It only wants to be established, which it doubtless will be in time. Enterprising graziers now frequently have farms in places and situations differing widely from each other; and, no doubt, the difference will keep increasing, until the railway and telegraph accommodation enables him to have one in Devon and one in Derbyshire,—to be able to know what is going on at each place every day, to give his instructions every night accordingly, and transport his cattle as occasion requires.

In making this digression on farming affairs, I am only doing so by way of comparing the condition of that most common of all useful productions, grass, with the ordinary garden crops expected to be produced in all gardens, and to urge the necessity of those moderating their expectations who have a garden of an extreme kind: take, for instance, a hot, hungry, gravelly soil, with only a few inches fit to till; as underneath it is likely to be barren and unproductive, so that no ordinary loosening of the substratum can make it a healthy medium for the action of roots. On such a soil, it is useless to expect good Cauliflowers and Lettuce in the hot summer months; while they very likely will live through a severe winter,—better there than in a cooler place. It is like the case of the grass fields alluded to above; and it cannot be too strongly urged on the inexperienced, the impossibility

of having everything in first-rate order at all, or any place, even in those most favoured by natural advantages and good cultivation: something or other will be found not to thrive so well as could be wished; while, in those least favoured by nature, there is sure to be a something that it is adapted to.

The above remarks are made with a view to remove the dissatisfaction so often expressed by employers, who, in passing through that best of all gardens, "Covent Garden," see many productions superior to what their own garden furnishes. The great demand, and large quantities, of everything wanted for the Metropolis, has led to each article being grown in the soil and situation best suited for it; and those who cultivate only one or two articles on the best possible soil adapted for these things, may reasonably be expected to arrive at a degree of perfection in their limited calling, which one, having a more extended sphere of action, cannot well attain in that particular branch. The bleak hill of Westmoreland cannot compete with Cornwall for fine spring Broccoli; while the latter place falls short of the vale of the Thames, in furnishing Asparagus, Lettuces, and many other kitchen vegetables. Lancashire has long been noted for Potatoes; but the early ones come from the Scilly Islands, and other extreme southern places. All these different things having been found out, by long established experience, to be those best suited to their respective districts, and these differing, as I have above stated, widely from each other, it is unreasonable to expect any one garden to compete with Covent Garden, in the quality of its produce in detail. I strongly urge a due consideration of this on all those who, passing through that amply-stocked depôt, look with some degree of envy, or dissatisfaction, on the fine things exposed to view. At the same time, while urging this on employers, I equally urge all young gardeners from the country, to look through this interesting market as many times as they can make it convenient; for, I confess, no horticultural exhibition I have ever witnessed has been so interesting to me as a walk through this famed collection of garden produce; and young men from a distance, who may be paying London a visit for the first time, will do well to bear in mind, that at least two of the most important gardens by which it is adorned, are free to the public at all reasonable hours,—Kew Garden and Covent Garden. If to these be added the Crystal Palace, there will be an ample field for the storing away of knowledge, which it is likely he will turn to account another day; other attractions there are, certainly, but these I leave till another time.

J. ROBSON.

THE COTTAGE BEE-KEEPER.

A LETTER

TO ALL SIMPLE FOLK WHO KEEP, OR INTEND TO KEEP, BEES.
By P. V. M. F.

(Continued from page 134.)

It may be of service to the cottager, to have a brief summary of the operations of bee-management in each month of the year. I therefore recommend to his attention the following

CALENDAR

OF MONTHLY MANAGEMENT.

In this calendar, adopting the arrangement of an old writer on bees, I begin the bee-year with the month of

OCTOBER.—Guard against wasps and other robbers, if any are seen about the hives. The best way to do this is by narrowing the entrances. Keep away spiders, and see that no other insects or vermin harbour about the hives.

NOVEMBER.—Clear away weeds about the hives, and keep an eye on them generally. If the entrances are too large, mice will frequently get into the hives; they are also apt to lurk

under the hackles; therefore, take off and shake these occasionally, and take a cat with you when you do this. Now, too, is the time to give new hackles to all the hives: this should be done always once every year. Also, clean the floor-boards of the hives.

DECEMBER.—Continue to guard against vermin: this caution, indeed, might be repeated every month. During severe frost, and while snow is on the ground, prevent the bees from coming out, but take care that they have air. Be sure to open the entrances on the return of mild weather.

JANUARY.—Last month's directions will serve for this month.

FEBRUARY.—Towards the close of this month, or early in March, turn up the hives, and cut out the lower part of any old or black comb. Do it gently, and with a sharp knife. Also, scrape and clean the floor-boards, or put new ones in their place.

MARCH.—If any of the stocks are light and poor, feed them liberally. Enlarge the entrances as the bees grow in numbers and activity. Prepare your new hives, if any are wanted; and any material that may be wanted in the busy season, as boxes, bee-dresses, &c.

APRIL.—In early springs, strong stocks will sometimes swarm towards the close of the month: be on the look out, therefore. Continue to feed poor stocks in bad weather, if necessary. See that the bees can get at water.

MAY.—Now is the season for swarms. If, therefore, any of your stocks are ready, make artificial swarms; this will save many swarms, and much watching. Let everything be in readiness for instant operations. If the weather continues cold, or wet, it will be proper to feed your new swarms, as well as poor stocks, till the return of fine weather. Give the bees additional room in small hives, or boxes, if honey abounds, and the hives are strong. This will seldom delay their swarming. As soon as they swarm, however, take away the small hives, and shut up the holes at the top of the stocks, till their numbers are strong again. Put top hives on the swarms a fortnight or three weeks after hiving them, according to the season. Clear away all weeds and cobwebs from about the hives, and destroy ants.

JUNE.—This is the great month for honey. Therefore, give your bees plenty of room, as they want it. Take the small hives off as they get filled, and put others in their place. In very good seasons, put flat hives *under*, as well as *over*, your strong stocks and swarms, but let the bees only have *one* entrance, that in the main hive. This entrance make as wide as is necessary for the accommodation of the bees. Still watch for swarms, and even in July, for bees *will* swarm sometimes, do what one can to prevent them.

JULY.—Continue to pay attention to all your hives, as in June. In very hot weather shade the bees as much as possible, or the combs may melt, and the hives be ruined, especially the swarms. Take off full hives, but do not give more room after the middle of the month. As soon as the bees relax their labours, towards the close of the month is the best time for taking up your stocks, and gathering in your honey harvest. What honey the bees collect afterwards, is generally of inferior quality. Be sure to save, if you can, the young brood or unhatched bees in all the plundered hives, by turning them up each under the nearest adjoining stocks. Also, carefully examine the stock hives, before you begin to plunder your swarms.

AUGUST.—Narrow the entrances as the bees grow idle, as in this month wasps abound, and other enemies of bees. Towards the end of the month, that is after the young bees are all hatched out, take away the plundered hives from under the stocks. Stow them away carefully in a dry place till the spring, if the combs are fresh and clean; otherwise, melt the comb down for wax, and clean out the hives with hot water.

SEPTEMBER.—Little more is to be done this month, but to protect the bees against the attacks of wasps.

GERANIUM IGNESENS SUPERBA.

I do not know this bedding Geranium, and I shall be particularly obliged to Mr. Wills (page 106) for half-a-dozen of it, and of the darkest *Verbena Jacqinta*, to be sent to the Waterloo Station, London, whence I can have them down by the next train to Kingston Station, which is in the centre of Surbiton.

We had *Ignescens* and *Ignescens major* forty years ago, and both were smaller and different flowers from those of *Ignescens* of the present day. I am also confirmed in my suspicion about *Crimson King*, as a bedder, from Mr. Wills's experience. Has Mr. W. tried *Gauntlet* as a regular bedder? A florist made £90 of the cut flowers from a bed of *Gauntlet* in one year.—D. BEATON.

WILD FLOWERS.

SURELY the young men and women of the present day have no lack of innocent amusement to occupy their leisure hours. The "art of seeing" has opened up a way to Nature's treasure house, so that a walk need not now be a mere "constitutional," but a means of real enjoyment, implanting germs of pleasurable thought for many a quiet hour.

The following handbill, privately issued, on the formation of a class for obtaining some knowledge of wild flowers, may, perhaps, be of use as a hint to others:—

"SPRING FLOWERS.

"Who is not fond of the beauties of nature? and who does not enjoy a ramble in the fields on a fine May morning,—gathering the charming flowers, scattered on every side by a beneficent Creator?

'These are thy glorious works, Parent of good,
Almighty!'

"But when a flower is plucked, how few know anything of its history, or name, or *why* it is so called!

"Do you wish for information, so that you may walk in the country intelligently, and thereby add to innocent enjoyment? then JOIN A CLASS for this purpose, now forming at the Institute, meeting every Thursday evening at eight o'clock.

'Consider the Lilies of the Field,'
'How they grow.'—MATT. vi. 28.

—E. C., Chelmsford, May 8, 1858."

In this case a subscription of 6d. per quarter has been received, and none but members of the Institution are admitted.

On the first night, one of the class furnished upwards of forty named specimens, in flower, which had been gathered the same day in the immediate neighbourhood.—E. A. COPLAND.

RESULT OF SEVEN YEARS' BEE-KEEPING.

ACTUAL PRODUCE TAKEN.

Year.	Stocks	Honey-comb.	Run Honey.	Swarms	Honey-comb.	Run Honey.
1850	2	11 $\frac{3}{4}$	...	...	...	...
1851	5	23 $\frac{1}{2}$	47 $\frac{1}{4}$	3	6 $\frac{1}{2}$	29
1852	3	23 $\frac{1}{4}$	28 $\frac{1}{2}$	4	...	31 $\frac{3}{4}$
1853	4	5 $\frac{1}{4}$	5 $\frac{1}{2}$	7	15	14 $\frac{3}{4}$
1854	2	2	16 $\frac{3}{4}$	5	9 $\frac{1}{2}$	21
1855	1	3	...	...	...	...
1856	3	2	9 $\frac{3}{4}$	1	2	9
	20	71 $\frac{1}{4}$	107 $\frac{3}{4}$	20	33 $\frac{1}{4}$	105 $\frac{1}{2}$
	Honeycomb	71 $\frac{1}{4}$	71 $\frac{1}{4}$	Honeycomb	33 $\frac{1}{4}$	33 $\frac{1}{4}$
			179 or			138 $\frac{3}{4}$ or
			8 lbs. 15 ozs. each stock			6 lbs. 15 ozs. each swarm
			on the average.			on the average.

In the above seven years, I have lost seventeen stocks by death, in addition to many from experiments. Most of the plans suggested by Mr. Payne, the country Curate, and others, have been tried; and Payne's, Golding's, Neighbour's, Taylor's, and Stewarton hives have been used. The common straw, with flat wood top hole,—Neighbour's and Taylor's,—have been found most interesting and productive. The Stewarton did not answer the expectations created by the inventor: although only one box for hiving the swarm was used, the slides were inconvenient and *difficult* to manage. In six cases, in which the removal of a swarm to the stock-place was tried, four stocks were lost in consequence; one did fairly, and the sixth stock sent out *two casts*. Bee-keeping has afforded me much pleasure, and tended to relieve my mind in seasons of deep depression; but I have not yet found it profitable in other ways, although every attention has been given to it. I write this simply to interest others, and to prevent disappointment, in case pecuniary advantage is *relied* on for keeping these interesting little creatures.—N. M. G.

ON SOME MOULDS REFERRED BY AUTHORS TO FUMAGO, AND ON CERTAIN ALLIED OR ANALAGOUS FORMS.

By the Rev. M. J. BERKELEY, M.A., F.L.S., and J. B. H. J. DESMAZIERES.

(Continued from page 133.)

THE characters of the genus cannot be given better than in the words of Dr. Montagne, which are, however, very slightly modified, in consequence of our having had more objects for comparison:—

Peridium crassiusculum polymorphum, lageniforme clavatum aut ceranoideum, simplex aut ramosum, è duplici strato formatum, exteriori scilicet è mycelii floccis adscendente compacto celluloso, cellulis deorsum penta-hexagonis, sursum parallelogrammis linearibusque, floccorum apicibus sæpe liberis ciliaribus, interiori mucilagineo subhyalino ferè anhisto, apice irregulariter rumpens interdum ore fimbriatum. Nucleus gelatinosus. Sporidia oblonga varie septata fusciscentia ascis latè obovoideis vel clavatis mox diffuenti-resorptis inclusa.

Mycelium superficiale libere evolutum nigrescens è floccis brevibus ramosis moniliformibus aut cylindricis articulatis fuscis densè intricatis compositum.

Hab. In Australiâ, Americâ boreali a Provincia Ohiensi ad Carolinam Inferiorem, Galliâ, Britanniâ atque Hiberniâ. *Scorise* maximè affinis.

* FLOCCI MORE OR LESS CONNECTED BY THEIR TRANSPARENT COAT.

1. *Capnodium Fuligo*, Berk. and Desm. Mycelio crassiusculo compacto a matrice secernibili; peridiis floccis processibusque ostioliformibus exasperatis; sporidiis minoribus. *Gliotrichum Fuligo*, Fr., "Syst. Myc.," Vol. III., p. 379. *Dematium Fuligo*, Schwein., pro parte.

On leaves of *Uvaria triloba*, principally on the upper surface. Ohio; T. G. Lea, Esq. On leaves of various plants, Pennsylvania; L. v. Schweinitz. (Fig. 2.)



Fig. 2.

Fig. 1. Asci and sporidia of *Scorias spongiosa*, Fr., magnified 600 diameters. From a sketch by Dr. Montagne.

Fig. 2. *Capnodium Fuligo*. B. and D. Peridia, mycelium, and sporidia highly magnified. From a sketch by Mr. Broome. The threads of the mycelium to the right of the figure are evidently connected by their gelatinous integument.

Forming cloth-like scattered patches, which, at a certain period of growth, are separable from the surface of the leaf on which they grow. Flocci, connected with one another by their thick transparent subgelatinous coat, running here and there, as in all the species, into a continuous cellular stratum, where closely pressed to the matrix. Peridia mostly simple, but sometimes forked or even trifid, lageniform, more or less pointed, rough all over with the free ends of the flocci, which are often very thick where they spring from their surface, and with ostioliform processes, which are in fact abortive peridia. Sporidia minute, elliptic, with an occasional septum. Possibly perfectly developed sporidia may not have been seen. This species approaches so near to *Scorias* in structure that we have placed it in a separate section. It is thicker than the others, and more gelatinous, though looking very different from the intricate, highly-developed *Scorias*, which is sometimes an inch or more in thickness.

** FLOCCI DISTINCT, PERIDIA MORE OR LESS BRANCHED

2. *C. Schweinitzii*, Berk. and Desm. Velutinum; floccis subcylindricis; peridiis subsimplicibus elongatis lævibus; sporidiis obovatis cellulosis; cellulis vix constrictis. *Dematium Fuligo*, Schwein., "Car.," p. 128 (in part). *Cladosporium Fuligo*, Schwein., in Hook. "Herb." *Cladosporium Fumago*, Schwein., "North Am. Fung.," No. 2593 (in part).

On leaves of herbs. Pennsylvania. L. v. Schweinitz.

The authentic specimen in Sir W. J. Hooker's "Herbarium" is in a very bad state; but it seems to be quite different from the plant sent by the late Mr. Lea, which is evidently the species of Fries, from his description: "Fibras monstravit

rudes atras subreticulatas è pluribus conglutinis, ut videbatur, formatas." The peridia are not rough with flocci or processes, and, as far as has been seen, are simple, though doubtless occasionally branched (fig. 3).

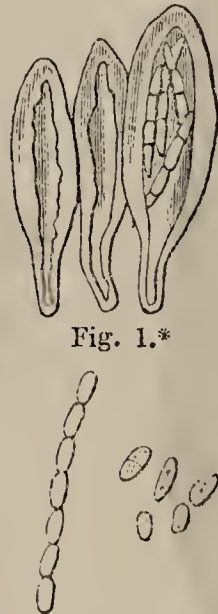


Fig. 1.*



Fig. 3. *Capnodium Schweinitzii*, B. and D. Flocci of mycelium and sporidia, both highly magnified.

The flocci, too, are far more cylindrical. The sporidia are different from those of the three following species, which come nearest to it in habit and character. We do not doubt that we shall soon obtain better specimens from Mr. Curtis, now his attention has been called to the genus. Schweinitz's *Dematium Fuligo* comprised, probably, several species; in his later and larger list he considered it the same with *Cladosporium Fumago*, Lk., which is clearly a mistake, and shows that he had not any definite notions as to his species.

3. *C. salicinum*, Mont. Velutinum; peridiis hic illic parce furcatis, brevibus; sporidiis oblongis septatis articulis constrictis, longitudinaliter divis. Mont. in "Ann. of Nat. Hist.," 2nd series, Vol. III., p. 520.

On leaves of Willows of the section *Cinerella*. Switzerland, Roffavie. Paris, Durieu de Maisonneuve. We have it also, but in a barren state, from Dr. Léveillé.

* This should have been inserted at p. 132, instead of the cut we repeat to-day.

Forming a thin, even, velvety-black stratum, which even under a lens appears but slightly bristly. Mycelium moniliform, the articulations containing a single nucleus.* Peridia rather short, often obtuse, but sometimes lageniform and acuminate, sparingly forked, sometimes fringed (fig. 4). Asci broad,



Fig. 4. *Capnodium salicinum*, Mont. Asci with immature sporidia, and mature sporidia, from the absorbed asci, magnified 380 diameters. From a sketch by Dr. Montagne.

4. *C. elongatum*, Berk. and Desm. Setosum; peridiis elongatis acuminatis ut plurimum simplicibus fimbriatisque sporidiis 2-3 septatis articulis demum constrictis quandoque longitudinaliter divis. "Curt." No. 1634.

On *Populus angulata*. Santee River, South Carolina. H. W. Ravenel, Esq. (Fig. 5.)

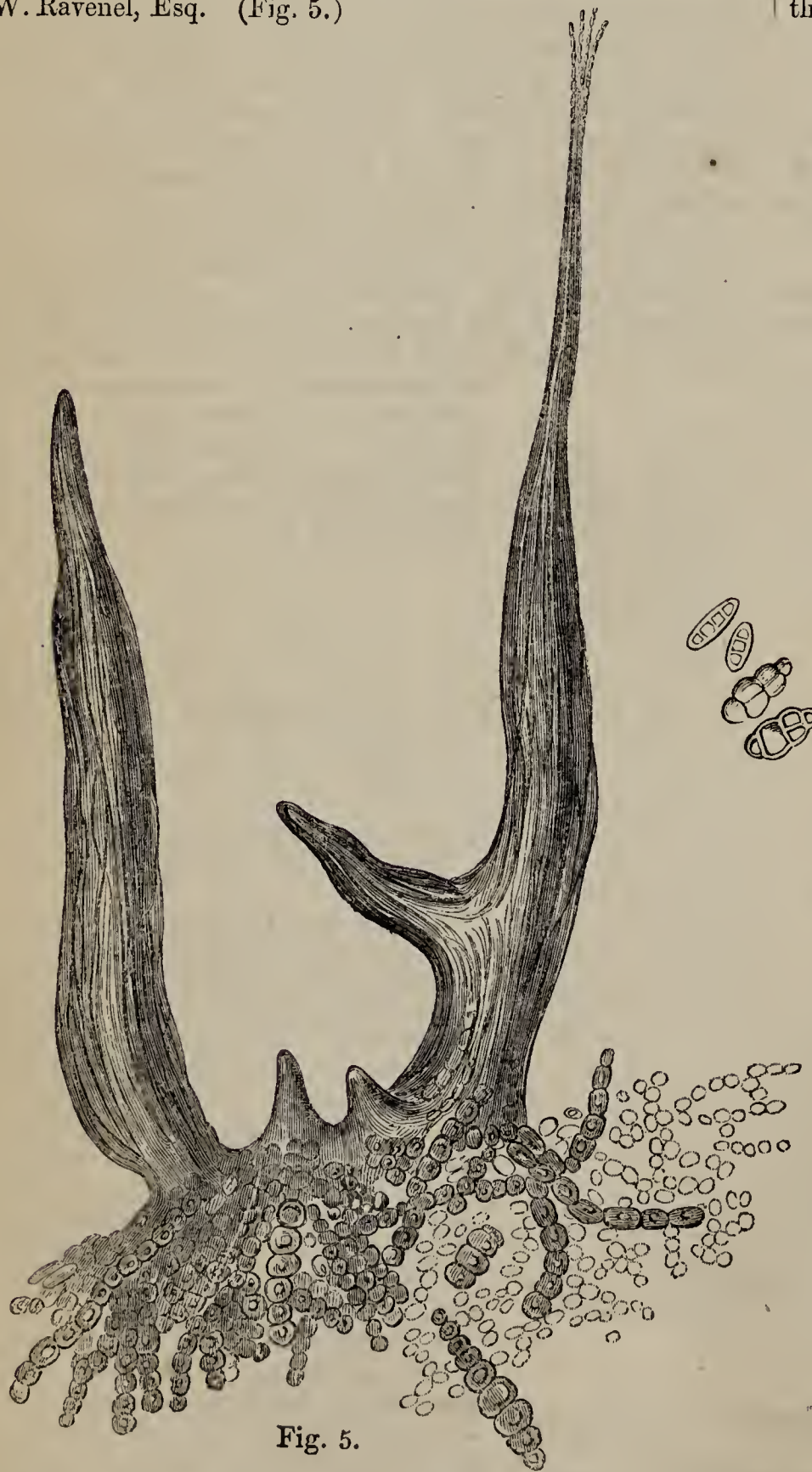


Fig. 5.

Fig. 5. *Capnodium elongatum*, B. and D., with young and mature sporidia, more or less highly magnified. From a sketch by Mr. Broome.

* Mr. Broome has observed two curious appearances in the filaments. In one case a few filaments were subulate with a central cavity, two-thirds of which was filled with short moniliform endochromes; in the other, the outer coat was very delicate, loose, and transversely striate.

Forming a scattered setose black stratum; mycelium moniliform. Peridia very much elongated, acuminate, generally simple; orifice mostly fimbriated. Sporidia at first oblong bitrileptate, at length broader, with the articulations constricted, and the central one longitudinally septate. Intermediate between the foregoing species and that which follows, agreeing with the former in its more simple peridia, with the latter in its setose stratum.

(To be continued.)

HORTICULTURAL NOTES MADE DURING A FEW DAYS IN FRANCE.

Having to accompany my daughter to France, in the early part of the month of May, I made a few notes, which, probably, you may think would be of some little interest to your readers.

Our destination was Margency, a village at the head of the valley of Montmorency, from which it is situated at a distance of about half a league. It is reached from Paris by railroad, and omnibus or fly.

We left Paris by the *Chemin de Fer du Nord*, and, after taking our tickets, were penned up in the waiting-rooms until the train was ready,—a custom always rather annoying to our English notions of freedom and liberty. The doors were thrown open to each class in succession; and, having taken our places in most comfortable and superior carriages,—far superior to any in our own country,—we proceeded to Enghien, passing through St. Denis, which is fast becoming a large manufacturing town.

Enghien is a noted place of amusement for the Parisian *badauds* (equivalent to our cockneys), who do not show bad taste in their selection of such a locality; for, besides being delightfully situated, it possesses a very picturesque lake, upon which they row, and in which they fish, although, I suspect, without much result.

From Enghien we proceeded by *voiture* (an open fly) to Margency, skirting Montmorency, which is built on the heights which protect its valley—long celebrated for its beauty—from the northern winds. This valley is one of the most prolific tracts of country in the neighbourhood of the French capital, which it supplies with Vegetables, Flowers, and Fruit. It is particularly noted for its Asparagus, which is grown without any preparation of beds, but simply in the open ground, and generally between rows of the Vine. The method of culture of the two appears to be, to draw the earth from the Vines in the autumn, over the Asparagus; the first, therefore, remaining in the hollows or trenches thus formed; the latter, under the ridges. The winter dressing of the Vine is simply wood-ashes; they eschew manure entirely. These ashes are left exposed during the winter, and were so exposed when I saw them on the 10th of May.

After the crop of Asparagus is cut, the ashes are slightly forked in, and the whole field—for they are open fields—is then levelled. Thus, then, they expose the roots of the Vines to a nearer proximity to the atmosphere during the winter months, and the reverse treatment for the Asparagus.

I leave it to your more scientific contributors to explain the why and the wherefore of this; I could not learn. Success, at all events, attends the culture as regards Asparagus; but the Vines of this country, although yielding a good, fair, and saleable grape, are utterly worthless for wine: whether it could be improved by a different cultivation, or not, I cannot say. It is quite worth naming, that the use of sulphur, both as a preventive and a cure of the mildew *oidium*, is general throughout this district; and, in fact, so it must be throughout France, for the price of the article has doubled within the last two years. The most general method of application is by the *boite à houppe* of Messrs. Oudin and Frane. I bought one of the makers, when in Paris, but I think I have seen them advertised in your publication. I would

strongly recommend them to anyone. Nothing can be more simple than its use.

The larger end has holes perforated in a tin plate, a few of which are left open, and into the others are fixed threads of worsted. The case is half-filled with sulphur, and the slightest shake dusts the Vines with the powdered contents. I should think an acre of Vines could be dusted in a day. Its salutary effect is now established.

I found a very large breadth of land planted with Currants, the produce finding a ready sale in the Paris market for making the *sirop de Groseilles*, which, mixed with water, forms one of the summer beverages of the Parisians. As a fruit, the Currant is never seen on the table.

Apple and Pear trees abound, and the produce of the latter is little, if at all, inferior to the Pears of Jersey. I speak thus from last year's experience, having had a box of the different kinds, containing 200 Pears, sent me as a present.

I do not think they can be great in Apples, as they treat the fruit with indifference.

I saw all the different kinds of vegetables, known amongst us, in cultivation; and some few, but little used with us, such as Artichokes and Cardoons, grown to a large extent.

Everything in the open ground was some three weeks in advance of us in the neighbourhood of London, except the Vine, which not a little surprised me, as they produce ripe Grapes, in the open air, from six weeks to two months earlier than we can do by the best of management and in a propitious season.

The neighbourhood abounds in pretty seats, but the gardens and grounds are wanting in that neatness and elegance to which we are accustomed. There are, however, two great causes to which this may be attributed—the impossibility of obtaining a good grass lawn, and an entire absence of gravel. They require the moisture of our climate for the first, although I believe that an English gardener would be able to do much for them. I could find no one who possessed the slightest idea of laying down a lawn as practised with us. They simply adopt the primitive plan of digging, pulverising, and levelling the earth, and then sowing, as we should do for a crop of hay; and, even when they get a tolerable crop of grass, they have no idea of a weekly rolling, watering, and cutting.

In the place of gravel I found sand, generally loose; quite innocent of a roller. When the walks were on a declivity, this sand was regularly washed down, from the upper parts to the lower, by heavy rain. In a few gardens, where the owners spared no expense, I found river sand, in which were round pebbles—a costly article in that neighbourhood, but no improvement. In no case could I find that it was a custom to

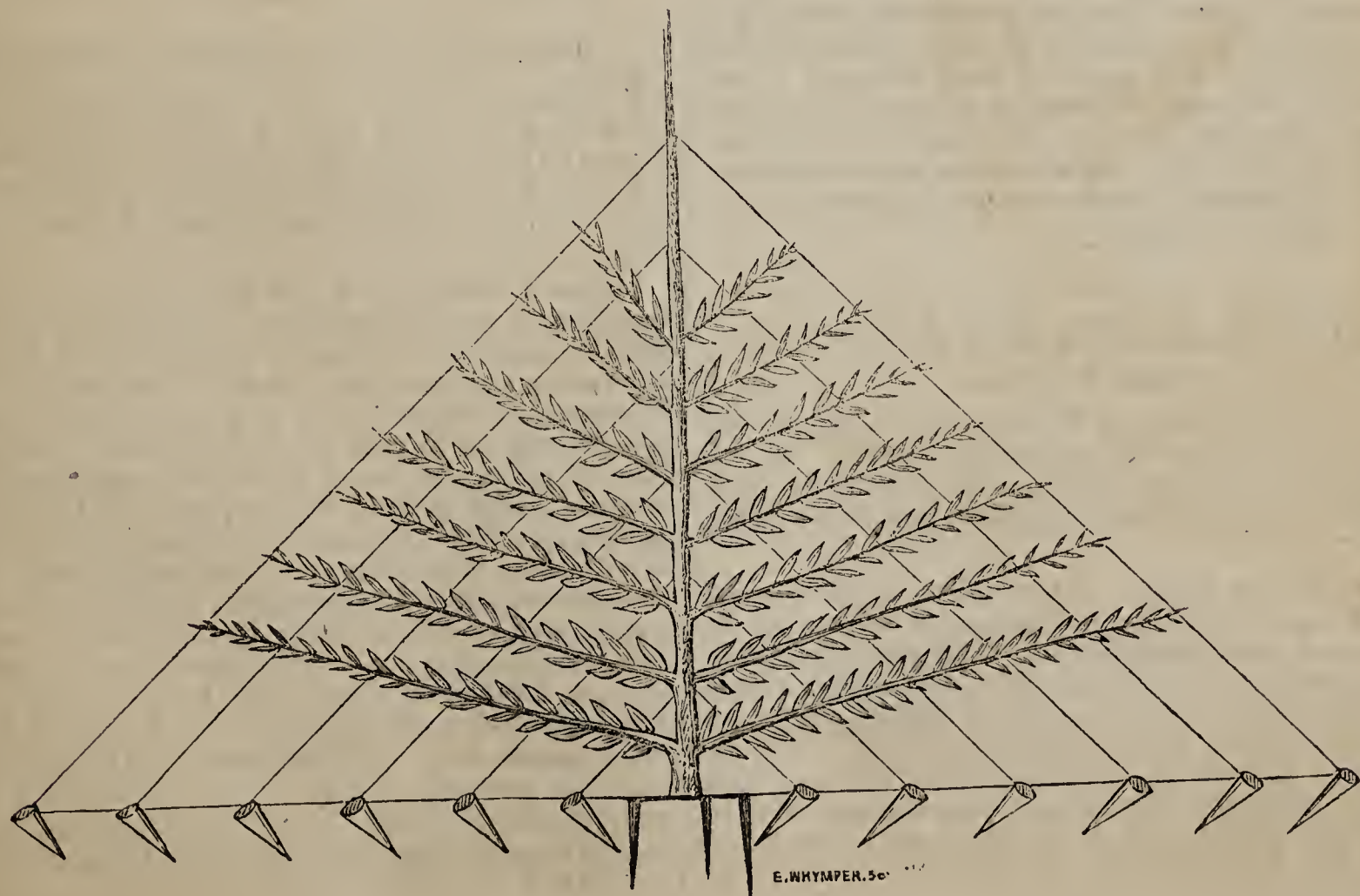
use a roller; nor did I anywhere even see that which no amateur in this country, who possessed a garden of the width of his house only, would dream of being without,—an iron roller. The only things I saw were primitive, home-made wooden ones, used chiefly to roll beds after sowing.

That neatest of all edging, too, Box, is considered as old-fashioned, and seen but in the *potagers*, or kitchen-gardens; and in its place they use an edging of their miserable grass, which grows long, thin, and lanky, like the hairs on the head of an octogenarian. But, even with these drawbacks, their intermural gardens look delightful. Every flower and every tree grows as though it had found a congenial soil. I visited one belonging to Monsieur De Lou, which was the most highly cultivated I have yet seen in any country. No one, with compass, rule, and pencil, could draw with more mathematical precision a form of espalier superior to that of every tree in this garden.

The Peaches were pruned on the summer pinching system, so that the fruit grew from the main branches. Not a useless shoot was permitted. I found they always pinch above the third bud. One large wall contained a long row of single-stemmed trees, planted at a distance of two feet from each other, and trained at an angle of about 55° . The very intelligent and amiable proprietor—a most enthusiastic amateur,—who was polite enough to play the part of cicerone, informed me that it was an admirable plan for quickly covering a wall; but the trees were of short duration, nor did they produce fruit equal to those on the older system.

The borders round the walls were of the usual width; but, in order to economise room and allow ample space for the superior fruits, he had planted, at a distance of about nine inches from the alleys, rows of Apple trees, the main stems of which were one foot high; from each of these there grew one branch only, trained horizontally, to a wire extending round the said borders, and supported at intervals of ten or twelve yards by short posts. When the branch of one tree reached its neighbour, it was grafted on it; so that, eventually, from ten to a dozen trees so managed will form one entire tree, with ten to twelve separate roots. They were all in full blossom, and the effect was exceedingly pretty. The advantage of the plan is evident. The air is not intercepted, either from the trees beyond or the crops on the borders.

Of the espalier Pear and Plum trees, I cannot speak in sufficient admiration. The main stem of each tree is supported by a three-pronged iron rod, of one inch diameter and about nine feet high. Wires fastened to this rod, at about nine inches apart, were tightly secured to posts, firmly driven into the ground. To these wires were trained the branches, so that each tree takes this form:—



The branches are lowered annually, until they become horizontal; and each tree is so planted, that the branches will meet those of its neighbour; so that in a few years they will form a wall or walls of trees. The garden was laid out only four years ago.

On several of the wall Pear trees, I observed small fore-shoots growing at intervals on the main, upright stems. These, I was informed, were buddings of a Pear, which, it had been found, grew to perfection only on other stocks. I am vexed that I omitted to take the name of this Pear; but I was told that it was a very luscious one, and that it thus grew to two pounds weight. One single Pear only is allowed to ripen on each shoot; and, as the weight of the fruit would inevitably break it off, if it had to bear it unsupported, a wooden shelf is contrived, upon which the fruit rests.

I observed, too, a novelty in the way of edging, which quite took my fancy. It was formed of rings of white porcelain, exactly half of each ring being thrust in the ground. These rings are made to bake the fine porcelain plates upon, and, having served their purpose, are thrown away. The merit of the application is due to my host, and certainly the thought showed good taste; for the contrast of the pure white with the earth and the lawn—I beg pardon, the grass; I have said they have no lawn—was pretty, and gave a lightness and elegance to the general effect.

This garden was further ornamented by an elegant and well-kept series of aviaries, in which were some choice birds of the paroquet tribe, and many small birds from Australia and Africa.

I shall renew my visit to the neighbourhood about the end of June, and if you think that a few more words, on the appearance then of what I have described, will be likely to interest your readers, I will take a few notes accordingly.—H. S. W.

[Your notes are highly acceptable, and so will be those you offer. Let us know the name of the Pear. We wish many of our readers would use their eyes and pens similarly.—ED.]

QUERIES AND ANSWERS.

CINERARIAS IN SUCCESSION.

“I have just finished pricking off into thumbs some strong seedlings of Cineraria. When may I expect them to bloom, if I shift as roots touch pots? At what periods should I sow seeds of same, to bloom in succession from March to August?”—A. C.

[You answer the first question yourself. You “expect” the first bloom in March; then, from the same sowing, you must husband your plants so as to get them to flower on till the middle of May. Sow again in about a month or six weeks, and that will carry you safely to the end of the Cineraria season. But why not have Cinerarias in by the new year? We remember very well when there was no Cineraria, so called, in England, except *Cineraria cruenta*, and we often saw it bloom in January.]

DAHLIAS FOR BEDDING, AND HOW TO PEG THEM DOWN.

“‘A NEW BEGINNER IN GARDENING’ would be very much obliged by being informed the best method of pegging down Dahlias in a bed? and how they did them at the Crystal Palace last year? and which are the best sorts for such purposes?”

[The best sorts of Dahlias, to train down on the ground, are the bedding-out Dahlias; and the best of them is yet the old *Zelinda*, of which THE COTTAGE GARDENER spoke ever, and every year since he came into this world; and it was only three or four weeks ago, that one of our best judges of such plants wrote a whole page on bedding Dahlias. As to the training down of dwarf Dahlias, what is it but a larger edition of training Verbenas? First of all, plant all such Dahlias on their sides, unless, indeed, you plant the roots; and, if you do, watch the shoots till they are from four to six inches

long; then you can very easily bend them down, and train them as low as you choose; the only secret is, to begin early with them, and not to let any one shoot grow more than six inches before it is trained. Then, a piece of matting, or a piece of worsted thread, six inches long, is the simplest and best contrivance for holding down all shoots whatsoever. Double it round the shoot, put both ends together, and plant both ends together, like planting a Cabbage plant with a dibber. If you can pull back the Cabbage plant, directly after it is planted, without pulling its ears off, or hurting them very much, it was not rightly planted,—not firm enough in the ground; and if giving a twitch at the shoot pulls up the string, that shows the string was not made firm enough; or if it snaps, it was not strong enough. But, depend upon it, after all that has been tried, there is nothing better for training with.]

SALVIA PATENS AND CALCEOLARIA AMPLEXICAULIS IN A BED.

“I am about to plant a bed of yellow Calceolarias (*Amplexicaulis*), and I wish to have a blue centre formed of the *Delphinium formosum*, or *Salvia patens*. The former I should prefer, if I could depend upon its blooming this year, which I am in doubt about. It is a perennial, and my plants are only seedlings, an inch or so high.”—EVADNE.

[Your seedlings of *Delphinium formosum*, being just two inches long in the last week in May, will not be fit to plant in a flower-bed till next March or April. So you must use the blue *Salvia* for the centre of the *Calceolaria amplexicaulis*. Plant the *Salvia patens* on their side, and train them to the surface twice, as soon as they make growth for training; and do so likewise with all the plants of *Amplexicaulis*, and you cannot think how that will improve their looks for the rest of the season. Of course, you are aware that the best way for training all kinds and sorts of bedding plants, is by strips of matting doubled round the shoot, and the two ends then to be fixed in the ground. Some extravagant people actually give 3s. a day for a full-grown man to make hooks and pegs from ferns and brooms, to hold down a Dahlia shoot, and all the training shoots in the garden; when 3s. would buy the best mat in Russia, and one mat would go as far, and far better, than 50s. worth of the best pegs that ever were made. A sentimental friend of ours uses “hair pins” to train his *Beauty Supreme* Verbenas; and when we asked what these “hair pins” were made of, or what they were like, what they would cost the thousand, and where to buy them, the answers were so extravagant, that it would be of no public use to print them.]

CULTURE OF FARFUGIUM GRANDE.

“Having purchased a plant of the *Farfugium grande*, I feel anxious to possess a fine specimen of it, and would feel obliged to you, if you would inform me how it is to be treated. I have it in an Orchard-house, under a bellglass, and it is doing well, but will soon be too large for one.”—A SUBSCRIBER.

[It was a wise plan to put *Farfugium grande* under the handglass in the Orchard-house. The grand *Farfugium* has passed through the furnace of high pressure, for increase, this spring, and needs rest, and shade, and shelter for a while. If people had the good sense to perceive that all rare plants, and all cheap plants that are sold in spring, must necessarily be very young, and come out of close propagating places; must be packed in damp balls to travel, and, on being unpacked, are as unfit to stand the ordinary chances of weather as a new-born babe; they, the wise people, would do, as has been done with this *Farfugium*; they would put all their newly-bought plants—such as hardy Roses, Phloxes, Pentstemons, and Conifers—into cold, close frames, and take as much care of them, for the first ten or fifteen days, as if they were new Verbenas, Dahlias, or pet Geraniums. *Farfugium* is as hardy as a Primrose, and no soil can be too good for it in pots. To make fine specimens of it, pot it as you would a Cineraria, each time the new roots come to the side of the pot, and use exactly the same compost as for the best Pelargoniums; but it will do in every kind of “compost.”]

CETERACH OFFICINARUM — RHODODENDRON
EDGORTHII.

"I inclose you two fronds of *Ceterach*,—one of the common, and one of the giant variety,—of which I wrote you an account some short time ago, and which was found close to my cottage, although no specimen of the common *Ceterach* has ever been found in this vicinity.

"The frond I inclose is but a *very small one*, compared with original ones which were on the plant when found; but I think that, when you examine it, side by side with the common kind, you will agree with me, in thinking it a distinct variety. The edge of the leaflets is distinctly crenated, or scalloped, while in the common *Ceterach* they are entire, and smooth, and the leaflets also are in a way imbricated, or overlapping each other, which is not the case in the common variety.

"If a faithful representation of both fronds, of *natural size*, and making the frond of my variety *equal in length and breadth to the original frond*, of which I sent you a rough sketch some time since, was inserted in your valuable periodical, it might call the attention of others to this point, and eventually aid in determining whether it is a variety or not.

"I should also be glad to find out whether *Rhododendron Edgorthii* has yet flowered in Ireland. I made inquiries of the Editor of the *Farmer's Gazette*, in Dublin, and he appears to think *not*. I am anxious to know, because it is in flower now with me, and is a most lovely thing; the flowers being, singly, full four inches across, of a pale blush, shaded with primrose, and tinted with carmine on the edges and outside. The fragrance most exquisite. The plant itself is ugly, long, lank, and leggy, and the foliage also not prepossessing. Hybridization will, however, improve that, and in a few years I expect we shall have it with flowers varying from white to scarlet, and with the ample foliage and close habit of the *Azalea*."—ITALICUS.

[This varied form in the *Ceterach officinarum* is not new, but is found in many localities. A rich soil and moist situation will alter the forms of many plants, and this giant plant of the *Ceterach* happens to be one in a favoured situation. This variety has been long known to botanists as *Ceterach officinarum*, var. *crenatum*. Moore, in his "Hand-book of British Ferns" (third edition), says, "It has the margins of the lobes distinctly crenato-sinuate, and, being usually of large size, is, perhaps, the result of luxuriant growth." We shall be glad of any information relative to the blooming of *Rhododendron Edgorthii*.—ED.]

PRUNING YOUNG TRAINED FRUIT TREES.

"There is one subject upon which I think amateur gardeners would be very grateful for more explicit information, and that is—the treatment of *young* fruit trees, *after* they have been trained according to the lucid directions already published by you. I think, in this matter of the pruning of fruit trees, you take for granted that we know a great deal, whereas we know nothing, and you will, I fear, find it as troublesome to teach us to prune and train dwarf fruit trees as it is to teach children their A B C. I should be glad to see an article on the mode of treating Apples, Pears, Plums, Cherries, and Apricots, after they have filled the space allotted to them, whether on a wall, or in espalier or dwarf standard; that is to say, when all the horizontal shoots have been developed, and the trees are expected to bear fruit. I will, for the sake of example, give you a description of a Pear tree which I have myself trained against a wall, taking Mr. Errington's directions as my guide. It is now six years old, and has ten horizontal shoots on either side its trunk, and is looking remarkably well, though it has not had any blossoms upon it as yet; and I am not aware how the little shoots, which are now coming in great quantities out of the horizontal branches, should be treated, to make them form spurs, as, if they are to be rubbed off altogether, many of the limbs will have no spurs on them at all. Hoping very soon to be enlightened."—A CONSTANT READER.

[Your requirements shall be attended to in time. In relation to your example of the Pear tree, our treatment would

vary according to circumstances. The Pear generally bears on spurs of two or three years old. Sometimes, we have had fine Pears this season from the terminal bud of a nice young shoot formed last year. Sometimes, by stopping the point of a young shoot, and, perhaps, bending it, so much vital force and maturing influence was thrown into the buds near its base, that in one season these would form fruit-buds for next year. That, however, is not commonly the case, as fruit-buds, to be so formed, generally take two years. Now, on main branches, where you have spurs, it would not do to remove these vigorous young shoots at present; for, if you did so, you would, no doubt, give more light to the spurs, and place them in a better position for maturing into flower-buds so far; but then, unfortunately, from removing the outlets of vigorous growth, the vital growing forces would be thrown into your short, stubby spurs, and you would have extension in wood-buds, instead of maturation into fruit-buds. If these side summer shoots are not very thick set along the branch, nor yet individually very long—say not above one foot—then they might remain as they are a few weeks longer, and then be shortened back half their distance in August, and still farther in September. If above that length, merely nip out their points at present; in another month break them half in two, at six or four inches from the stem, and let them hang down, and by September move them away altogether from the broken part. The object is to secure light and air to the spurs, and to the base of these shoots, without causing the buds on the short spurs to elongate into wood shoots.

If there are already no spurs on your main branches, and you must trust to the young shoots along them to produce them, then we would nip out the points of these side-shoots at once,—merely the point however. This will have a tendency to swell the almost imperceptible buds at the bases of the shoots, but not so much as to burst them. The vigour of growth is more likely to start a bud into extension, near the point of the shoot, where you had stopped it. When that takes place, stop it again, and shorten altogether farther back in September. In such a case, the great thing is to swell and ripen the lower buds, and not to cut so soon back, as to tempt them to extension into shoots, but early enough for the suns of autumn to mature them.

Near Winchester, last summer, we saw a young Orchard, the young summer shoots of which had the points so nipped out, that we rather expected that fruit-buds would bloom on these shoots, at least near their base, this spring, and produce fruit this autumn, which, without that merely nipping the point off, would not have taken place for another year. Now, if these nice, sizeable shoots had been cut back in June or July,—for a third, or for a half of their length,—the consequence most likely would have been a great profusion of small shoots from the started buds, and most likely, whatever treatment was given to these comparatively unripened shoots, it would be the second or third year before fruit spurs could be got from them. Stopping the points of such wood shoots, then, is so far an exhausting process, as to gently lead the instincts of the plant, so to speak, to think of increasing itself by seed or fruit-buds instead of wood-buds. And thus the finger and thumb, by merely nipping, can do much to regulate the relative action of the roots, and the branches of a tree; but too much nipping, or too early cutting back, or too severely cutting back, only retards growth for a time, to cause it to flow into more numerous channels of small spray, and thus, also, very likely break into a shoot what would otherwise have been matured into a fruit-bud. If a tree is healthy, and this pinching and stopping does not make it healthy, two things will very likely be necessary,—a thinning of the head to admit more light and air, and a cutting or shortening, or bringing nearer the surface the main roots, so that the sun may act more powerfully on them.—R. FISH.]

THE BEE SEASON.

A PARAGRAPH has been "going the round of the press," in which two cases are mentioned of bees swarming on the 18th of May. A two-year-old stock of mine gave a strong swarm on Sunday, the 16th, and I hived them into Stewarton boxes; and on the 2nd of June they had made 11½ lbs., as shown by my indicator. On the 22nd, the same stock gave

off a second swarm, which was also hived into a Stewarton, and is doing well. The stock was capped on the 10th of May, and I expect to take the cap about the 12th of June. Mr. Tegetmeier saw them both a few evenings since, and envied me my luck.—SHIRLEY HIBBERD, *Stoke Newington*.

[Another correspondent, residing at Camberwell, had a swarm on the 14th of May, and a second on the 20th of the same month.—ED.]

CLISSOLD'S SEEDLING, *alias* LODGEMORE SEEDLING APPLE.

I shall be obliged, if you will allow me to correct an error in, and add a few words to, a report of the Pomological Society, in one of your late numbers, respecting some dessert Apples sent by me to the last meeting, and favourably noticed. To be quite sure of the history of the Apple in question, I wrote to Mr. Foster, of Stroud (not *Strood*), Gloucestershire, nurseryman, as the only man I knew likely to be able to give me any information on the subject. His answer is as follows:—

"The variety in question was raised from seed in Lodge-more garden, when occupied by the owner, Mr. Cook, about forty years ago, and called *Lodgemore Seedling*; I have never heard of any other name. The late Mr. Clissold, whom you know, afterwards rented the garden, and, I believe, more than once exhibited the fruit at Kingscote Horticultural Exhibition. Many trees have been sent out during the last fifteen years; but, certainly, there has not been any inquiry or demand for it. Those I have sent out were sold in the ordinary way in a selection of dessert Apples. Excepting a gentleman from Sunbury (recommended, I believe, by you), no one has inquired for it; consequently, I have never grown a large stock of it."—WILLIAM FOSTER, *Stroud*.

I believe I bought my first tree from the Mr. Clissold mentioned by Mr. Foster, and understood it was a seedling of his own,—hence the name "Clissold's Seedling." I have had it in a bearing state, in my own garden, for ten or twelve years, and can say from experience that it is one of the best of our table Apples. Tree hardy; a good bearer and keeper. I have some at this time in excellent condition, and likely to last for some time to come. As I have always found my Apples keep well, in spite of bad seasons, I may mention, for the benefit of any who choose to profit by it, that I keep them in my wine-cellar (after *great care in the gathering*, a matter too little attended to). The spare bins are fitted with deal shelves (about six inches apart), on which I place the finest fruit, and the overplus in heaps, in other bins, or in baskets. I cannot say that I find much difference in the keeping of the two sets; but the shelves allow inspection, and removal of decayed fruit, better than the heaps. As the cellar is through a store-closet, light, air, and frosts, are effectually excluded.

I believe that Mr. Turner, of Slough, and Mr. Foster, of Stroud, will be able to supply plants of this fine Apple next season, if not this. To any member of the Pomological Society, I shall be happy to send grafts, on application at the proper season.

I would beg, also, to recommend to the notice of Apple fanciers, the following first-rate varieties of table Apples:—The *Ashmead Kernel*, one of the sweetest of late Apples; good bearer. The *Ord Apple*, or *Golden Drop*, perhaps the richest of all; small in size, but hardy, and good bearer. I cannot understand why these excellent sorts are not more generally grown, instead of the insipid rubbish so commonly met with. That fine kitchen Apple *Dumelow's Seedling*, *alias Wellington*, *alias Normanton Warder*,—one of the best and latest,—is not half so much grown as its merit deserves.—JOHN BRAMHALL, *St. John's Vicarage, near King's Lynn*.

ON TOADS CHANGING COLOUR.

I NEED hardly observe, when speaking of toads, that there are many erroneous notions entertained respecting them; but, perhaps, the one that is most harmless is, that they change their colour according to the weather. During the

past spring, we put six toads, nearly of a colour, which I considered to be three of each sex, into a pail of water, with a view to learn something of the fecundation of their spawn, which is the most mysterious part of their history. I failed, however, in my object; but was somewhat surprised to find the toads change colour repeatedly, so that even the same toad was hardly twice alike. As they were kept in a hot-house, changes of the weather could hardly have affected them; nor could fear, they seemed at their ease; neither could it have happened from the effects of light, nor from any peculiar movement like that of the camelion: for, at the time I refer to, they were motionless. After more attention, I was led to think that the contraction and extension of their skin had some share in the change of shade, which may partly account for toads being sometimes finely spotted like a leopard, while at other times their backs would be of a dirty ash-colour, and the spots hardly visible.

Like all other reptiles, the toad changes its skin, which comes off by bits. To get it off the head, he is obliged to scrape and pat with his fore feet; and this has given rise to the story of swallowing it in a ball, which I am persuaded is quite false. When kept as a curiosity, he leaves portions of the skin on the sides of his glass prison. I also deny the poisonous properties in toads, even the little believed by some recent writers. For instance, the Rev. J. G. Wood, in his book "The Common Objects of the Country," affirms his belief in the swallowing of the skin, just noticed. He says: "For the poisonous properties attributed to the toads, there is some foundation, though a small one." Small indeed; merely because a dog refuses to carry a toad in his mouth, owing to some acid humour, perhaps merely urine, instead of venom, said to be secreted from tubercles on its back. This common notion seems to arise from the fact, that toads exude a sort of sweat from all parts of their skin, through fear, and also from something connected with their state of health. It must here, too, be taken into account, that a toad is not a dog's natural prey, and that he never pursues one of his own accord. If, then, he seizes a toad, being set on by his master, he thinks he has done his duty by giving it a few shakes, as he would any other unusual or disagreeable object.

I may here note, that I was startled at the author's remarks at page 21, that "much of the present heedlessness respecting animals is caused by the popular idea that they have no souls, and that when they die they entirely perish;" and much more at the monstrous proposition, "that, unless these poor creatures were compensated in another life, there is no such quality as justice." This is backed by expressions from Holy Writ, painfully misapplied, into which I have no desire to enter. The facetious lines of Byron, on Bishop Berkeley's, perhaps less absurd, theory, is sufficient answer to Mr. Wood's absurd assertion:—"When Bishop Berkeley said, 'There was no matter,' and proved it, 'twas no matter what he said.'" Toads, however, are on every side victims of erroneous notions, entertained of them even by people otherwise sensible. These would be best dissipated by an attentive perusal of four interesting papers in the *Literary Gazette*, written by the Rev. Dr. Husenbeth, detailing his own experience, in keeping pet toads, for several years. These papers appeared in that periodical for March 12, 1831; Sept. 20, 1845; March 16, 1850; and Dec. 16, 1854. Some extracts, from the first only of these articles, are given in Professor Rennie's edition of "White's Selborne," page 67.

The only thing I know of, as likely to give rise to the opinion of toads being poisonous, is the milky secretion from their skin when wounded, of which a very remarkable account is given in the last of the above papers by Dr. Husenbeth. This has a peculiar, fetid smell; but, beyond this, nothing has been established in proof of any poisonous quality. It is alluded to in the old Scottish ballad of "Robin a Rie:"—

"The milk on the toad's back I wad prefer
To the poisons in his words that be."

—J. WIGHTON.

TO CORRESPONDENTS.

GRUBS—DUNG ON VINE BORDER (*J. W.*).—They are not worms, but grubs, the larvæ of the Daddy-long-legs (*Tipula oleracea*). We know of no remedy except stirring the soil round the plants that they are likely to attack, and destroying the marauders you may find. A little gas lime stirred into the soil near the plants might keep them away.

As the roots of the Vines are "like a net-work" beneath the mulch, remove all but about an inch of the mulch, and cover that inch with earth, so that it will not offend your employer's eye.

HENDERSON'S BROOMS (*Fillingham*).—We have no doubt you could obtain them through Messrs. Lawson, nurserymen, Edinburgh. They will be exhibited, probably, on the 9th inst., at Chiswick.

LARGE WHITE ARUM (*A Subscriber*).—It is the *Richardia Aethiopica*, and directions for its culture are at p. 121 of the present volume (No. 504).

ANTS (*H. Crossley*).—These insects are the gardener's friends. They do not injure the shoots or fruit on your walls: some other insects do that. Ants come after aphides, and eat the sweet secretion which they deposit. When fruit is ripe and cracked, or wounded by wasps, then ants come in for part of the spoil.

VEGETABLE MARROW (*James B. Hocombe*).—The size—2 feet 7 inches long, 2 feet 3 inches in circumference, and weight 27 lbs.—is very large; but this vegetable is not cultivated for the sake of size, and other Gourds are grown far larger.

MR. W. TURNER, NEEPSEND, SHEFFIELD (*A. Ainslie*).—We have made frequent inquiries after him, for we know many persons, as well as ourselves, who wish for a supply of his garden scissors; but we cannot hear anything of him. Garden scissors, however, such as he made, can be obtained of the Sheffield cutlers.

"MY FLOWERS" (*E. D. S.*).—These contributions to our pages have been published in a volume. No other of their author's writings have appeared in a separate form.

AGRICULTURAL WORK (*Grass*).—If by "cheapness" you mean a low price, we fear there is nothing to suit you. All illustrated works on the subject are necessarily expensive.

FRUIT-ROOM AND ICE-HOUSE (*C. G. Cotes*).—We know of none erected in this country; but we hear of many in America.

BUDDING AND CO. (*F. S. A.*).—We believe that the firm is extinct.

NAMES OF PLANTS (*D. S. W.*).—Yours is the Artillery Plant, *Pilea muscosa*. (*R. Clough*).—Your Ranunculus-like plants are—No. 1. *Caltha pulustris*, var. *pleno*. No. 2. *Trollius Europæus*. No. 3. *Trollius Asiaticus*. All three delight in shaded, moist borders. (*Varro*)—*Philadelphus coronarius*, or Mock Orange.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 9th and 10th. BEVERLEY AND EAST RIDING OF YORKSHIRE. Sec., W. W. Boulton, Beverley, Yorkshire. Entries close on the 1st of June.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. Sec., Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. Sec., Mr. James Beesley.

JULY 15th. YORK. Sec., Mr. R. Smith, cutler, 10, High Ousegate, York.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.

AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth, Shipley.

AUGUST 28th. HALIFAX AND CALDER VALE. Sec., Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.

OCTOBER 7th and 8th. WORCESTERSHIRE. Sec., Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

BATH AND WEST OF ENGLAND SOCIETY.

PRIZES given for poultry, at the Meeting of 1858, held at Cardiff, on the 2nd, 3rd, and 4th of June.

JUDGES: E. Hewitt, Esq., and W. B. Tegetmeier, Esq.

SPANISH.—Silver Cup, C. R. Titterton, Snow Hill, Birmingham. Second, J. K. Fowler, Aylesbury.

DORKING (Coloured).—Silver Cup, W. Bromley, Birmingham. Second, Mrs. Pettat, Ashe Rectory, Basingstoke. Highly Commended, R. Forman, Merthyr Tydvil; D. Williams, Merthyr Tydvil; C. R. Titterton, Birmingham. Commended, G. Chadwin, Tollard Royal, near Salisbury; R. Crawshay, Cyfarthfa Castle, Glamorganshire; Miss A. Wilcox, Nailsea Court, Bristol. (A very excellent class.)

DORKING (White).—Silver Cup, F. J. Coleridge, Ottery St. Mary, Devon. Second, Rev. G. F. Hodson, North Petherton, Bridgewater.

COCHIN-CHINA (Cinnamon, Buff, or Lemon).—Silver Cup and Second, Mrs. H. Fookes, Whitechurch, Blandford. Highly Commended, J. K. Fowler; J. Cattell, Birmingham.

COCHIN-CHINA (Brown, Partridge, and Grouse).—Silver Cup, G. C. Adkins, Edgbaston, Birmingham. Second, J. Cattell, Birmingham. Highly Commended, Rev. G. F. Hodson.

COCHIN-CHINA (White and Black).—Silver Cup, R. Crawshay, Cyfarthfa Castle, Glamorganshire (Black). Second, C. R. Titterton, Birmingham.

BRAHMA POOTRA.—Silver Cup and Second, R. Teebay, Fulwood, near Preston. Commended J. K. Bartrum, Bath.

GAME (White and Piles).—Silver Cup, Rev. G. S. Cruwys, Cruwys Morehard Court, Tiverton, Devon. Second, S. Mathew, Chilton Hall, Stowmarket.

GAME (Black-breasted, and other Reds).—Silver Cup, R. R. Sewell, Bridgewater, Somerset. Second, W. Buncombe, Newport, Barnstaple. Highly Commended, H. Lewis, Green Meadow, near Cardiff. Commended, Rev. G. S. Cruwys.

GAME (Duckwings, and other Greys and Blues).—Silver Cup, S. Mathew, Stowmarket. Second, W. Dawson, Selly Oak, Birmingham.

GAME (Blacks, and Brassy-winged except Greys).—J. R. Rodbard, Aldwick Court, Langford, near Bristol. Second, W. Dawson, Birmingham.

MALAY.—Silver Cup, R. W. Fryer, Hinton Road, near Hereford. Second, W. Rogers, Woodbridge, Suffolk. Highly Commended, S. Saunders, 12, Portman Terrace, Globe Road, Middlesex. Commended, W. Rogers, Woodbridge, Suffolk; J. Leighton, High Street, Cheltenham. (One of the best classes of Malays ever exhibited.)

HAMBURGH (Golden-pencilled).—Silver Cup, J. B. Chune, Coalbrookdale. Second, J. M. Sutton, Tenby, Pembrokeshire. Highly Commended, C. R. Titterton, Birmingham.

HAMBURGH (Silver-pencilled).—Silver Cup, T. Keable, Rowde Field Farm, Devizes, Wilts. Second, G. Griffiths, Worcester. Commended, T. Keable.

HAMBURGH (Golden-spangled).—Silver Cup and Second, J. B. Chune, Green Bank, Coalbrookdale. Commended, C. E. Coleridge, Eton College, Windsor; Mrs. H. Fookes, Blandford.

HAMBURGH (Silver-spangled).—Silver Cup, R. Teebay, Fulwood, near Preston. Second, J. B. Chune.

POLANDS (Black with White Crest).—Silver Cup, G. Ray, Minestead, Lyndhurst, Hampshire. Second, T. P. Edwards, Lyndhurst, Hants.

POLANDS (Golden-spangled).—Silver Cup, R. H. Bush, Clifton. Second, G. S. Fox, Wellington, Somerset. Commended, Mrs. Pettat, Ashe Rectory, Basingstoke.

POLANDS (Silver-spangled).—Silver Cup, W. Dawson, Selly Oak, Birmingham. Second, G. C. Adkins, Edgbaston, Birmingham. Highly Commended, C. R. Titterton, Birmingham.

ANY DISTINCT BREED.—Silver Cup, Miss S. H. Northcote, Upton Pyne, near Exeter (White Spanish). Second, R. W. Fryer, Hinton Road, near Hereford (Black Hamburg). Highly Commended, H. Churchill, Gloucester (Buff Poland); C. Coles, Fareham, Hants (Andalusian). Commended, C. H. Oliver, Newport, Monmouthshire (Black Hamburg); R. Crawshay, Cyfarthfa Castle, Glamorganshire (Black Hamburg and Indian Game).

CHICKENS.—Silver Cups, J. R. Rodbard (Spanish and Game). J. K. Fowler, Aylesbury (White Cochin). Second, H. Jones, Fulham, (Spanish); ditto (Cochin); G. Chadwin (Dorking). *Prize for best Table Fowls*, W. Bromley, Smithfield, Birmingham (Dorking). Highly Commended, G. W. Locke, Newport, Isle of Wight (Spanish), Commended, Miss Stewart, Croydon, Surrey (Cochin-China); C. Coles, Fareham (Andalusian). (In the opinion of the Judges, several of the birds shown as Dorking Chickens of this year are older than represented.)

SPANISH (Single Cock).—Silver Cup, J. K. Fowler, Prebendal Farm, Aylesbury. Second, J. K. Bartrum, Bath.

DORKING (Single Cock).—Silver Cup, H. Child, jun., Sherbourne Road, Birmingham. Second, C. H. Wakefield, Malvern Wells, Worcestershire. Highly Commended, H. Lingwood, Needham Market, Suffolk.

GAME (Single Cock).—Silver Cup, E. G. Jarvis, Ilton, near Chepstow. Second, G. Howard, Charlton, Malmesbury, Wiltshire. Commended, E. Bowley, Siddington House, Cirencester.

BANTAMS (Gold-laced).—Silver Cup, Rev. G. S. Cruwys, Cruwys Morehard Court. Second, G. C. Adkins. Highly Commended, R. Crawshay, Cyfarthfa Castle; Rev. G. F. Hodson. Commended, C. R. Titterton.

BANTAMS (Silver-laced).—Silver Cup, Rev. G. S. Cruwys, Cruwys Morehard Court. Second, Mrs. Pettat, Ashe Rectory, Basingstoke, Hampshire. Highly Commended, Rev. G. S. Cruwys; Rev. G. F. Hodson. (An extraordinary good class.)

BANTAMS (White).—Silver Cup, C. R. Titterton. Second, Rev. G. S. Cruwys. Highly Commended, J. K. Bartrum, Bath.

BANTAMS (Black).—Silver Cup, C. R. Titterton. Second, G. Warren, Merthyr Tydvil.

BANTAMS (Any other Variety).—Silver Cup, H. Churchill, Gloucester (Game). Second, T. B. Browne, Salperton Park, Andoversford, Gloucestershire (Rumpless).

DUCKS (Aylesbury).—Silver Cup and Second, J. K. Fowler. Highly Commended, Mrs. H. Fookes, Whitechurch. Commended, E. Payne, Cardiff. (A very good class.)

DUCKS (Rouen).—Silver Cup, J. K. Fowler. Second, J. R. Rodbard.

DUCKS (Any other Variety).—Silver Cup, J. K. Fowler (East India). Second, H. Churchill (East India). Commended, C. Ballance, Taunton (East India).

GEES.—Silver Cup, J. K. Fowler (Toulouse). Second, Mrs. Llewellyn, Court Colman, Bridgend (Emden). Highly Commended, E. Payne (Chinese Geese).

TURKEYS.—Silver Cup, Miss Julia Milward, Newton St. Loe, Bath. Second E. Colston, Cherry Orchard, Abergavenny.

PEA FOWLS.—Silver Cup, J. Buckley, Penyfai-house, Llanelly. Second, Miss Louise Crawshaw, Caversham Park, Reading, Berkshire (half Java).

EXTRA STOCK.—The Society's Medal, C. R. Titterton (White Guinea Fowls).

PIGEONS.—*Carriers*.—Prize, G. C. Adkins. Highly Commended, S. Summerhays, Fore Street, Taunton. Commended, F. G. Stevens, Pen-cross House, Hemyock, Wellington, Somerset. *Barbs*.—Prize, F. G. Stevens. Highly Commended, F. G. Stevens, and G. C. Adkins. Commended, F. G. Stevens. (An unusually good class.) *Pouters*.—Prize, G. C. Adkins. Very Highly Commended, F. G. Stevens. *Runts*.—Prize, F. G. Stevens. *Tantails*.—Prize, F. G. Stevens. Highly Commended, G. C. Adkins. *Jacobins*.—Prize, G. C. Adkins. *Turbits*.—Prize, G. C. Adkins. *Nuns*.—Prize, G. C. Adkins. *Archangels*.—Prize, F. G. Stevens. *Trumpeters*.—Prize, G. C. Adkins. Highly Commended, (two pens), F. G. Stevens. *Almond Tumblers*.—Prize, G. C. Adkins. Highly Commended, F. G. Stevens. *Tumblers*.—Prize, F. G. Stevens, (Black Mottled). Highly Commended (two pens), G. C. Adkins (Balds and Beards). *Owls*.—Prize, G. C. Adkins. Highly Commended G. C. Adkins, and F. G. Stevens. *Dragons*.—Prize, G. C. Adkins, Highly Commended, W. B. Hellard, Taunton. *Any other Variety*.—Prize, W. B. Hellard (Meeves). Highly Commended, G. C. Adkins (Red Magpies); F. G. Stevens (Swallows). Commended, F. G. Stevens (Brunswicks).

PREVENTING THE GAPES.

I WOULD give a word of advice to those that are afraid of gapes amongst chickens, or pheasants, relative to a protection attended with very little trouble and very little expense. Dissolve half a pound of sulphate of iron and one ounce of diluted sulphuric acid in half a pint of hot water. When thoroughly cold, add two gallons of spring water. Put the mixture into a two-gallon bottle, cork it, and let it stand seven days, when it is fit for use. The dose for chickens, from one week old, at the rate of a tea-spoonful to a pint of water every other day. If this be attended to there will be no loss by gapes. I have used it for years in a large breeding establishment, where the gapes has been an entire stranger.—J. DOUGLAS.

[This is a highly tonic medicine, and, if effectual, strengthens the opinion we have always expressed, that the gapes arises from a relaxed and weak constitution in the fowl.—ED.]

PROPOSED POULTRY EXHIBITION IN YORK.

A SOCIETY has recently been organised in York for the improvement of poultry, and it is intended to hold its first annual Exhibition in July next, during the assizes. The Association has secured the patronage of Lady Middleton, the High Sheriff, Lord Feversham, and other gentlemen connected with the city and county, and its Committee includes the names of several well-known poultry admirers, who, we doubt not, will do all they can to render the Exhibition as excellent and attractive as possible. An advertisement on the subject will be found in another column.

AUSTRALIAN BRONZE-WINGED DOVE.

THIS can be bred in confinement, for I have had several pairs under my care that have done so. They breed on the ground, and require feeding very high while they are breeding. The food given was hemp seed, wheat, and bread crumbled, which I found them very fond of while feeding their young. Also of lettuce leaves they would eat abundantly. They require watching when the young get about three weeks old, for they are then apt to neglect feeding them.—J. DOUGLAS.

PIGEONS.

(Continued from page 110.)

WHEN the Pigeons cease breeding, in the autumn, they should be shut in, when convenient, at night; and, it having been decided, in accordance with the number of nests, how many are to be retained for the breeding season next year, these may be let out, and the remainder at once killed, or sent off to London, or some other town or place, where they can be disposed of: the greater the distance the better, as there will be less chance of their returning, which they certainly would do if they got their liberty in the neighbourhood. At this general inspection, or pairing of the Pigeons, care must be taken to let out a proportional number of the sexes. It is

much the best plan to allow a few hens in excess of cocks for each; every unmatched male is a disturber of the general peace, while hens, being the more delicate birds, are generally in the minority. A few odd hens will be found of no inconvenience, and, if other doveots are in the neighbourhood, they will generally pick up and bring home some diseonsolate bachelor, by which means an addition of fresh blood may be introduced to the community; while the loss of the male bird is an actual benefit to the over-stocked, or unevenly-matched, inhabitants of the neighbourhood.

It is also advisable, at such times, to save as many as possible of young and vigorous birds, and destroy the old and quarrelsome.

By catching all the Pigeons, and putting them in baskets, or crates, they may be selected, and those intended to be kept, set at liberty, or returned to the doveot. A person accustomed to Pigeons can tell almost to a certainty which are the cocks and which are the hens. The cock has a thicker neck, a stouter bill, and is fuller about the cheeks. The hen looks milder; has a more timid expression of face; is thinner about the neck, base of the beak, and cheeks.

Suppose the doveot contains 250 nests, and it is decided to retain 100 pairs. I think the best plan would be to let out ninety-five pairs, and ten extra hens; or, in a neighbourhood where many stray Pigeons occur, then I would advise but ninety pairs, and twenty odd hens.

The age of the Pigeons is more difficult to determine than the sex. Young birds that have not yet moulted, may be known by their duller plumage, owing to the nest feathers of dark birds being edged with brown or kite. Their wing pinion feathers are also smaller, more pointed, and frequently brownish at the tip. Even if they have moulted, these, the secondary wing feathers, are usually retained till the next summer, and appear smaller, dingier, and of less substantial fabric to what they assume afterwards.

Old age shows itself in the wrinkling of the nostril covers, the sunken eye, the rough and thickened appearance of the eyelids, and the rough feet.

The immense difference in respect to productiveness in the overstocked and neglected doveot, as compared with the same when the numbers are reduced in accordance with the accommodation, and the old birds and superabundant males are removed, can scarcely be credited by persons who have not witnessed the result.

The pigeon-loft next claims our attention. This is the most usual kind of abode in which Pigeons are kept, and is well adapted for either country or town. The end of the roof of a barn, stable, granary, or dwelling-house, is equally available for the purpose. The entrance for the Pigeons should be towards the south, south-west, or south-east; and, whether situated on the roof, or at the end of the building, must be well secured against the inroads of cats or rats. It should have some device by which the Pigeons can be shut in when necessary; for instance, when the entrance is through a number of pigeon-holes, then a wired, or latticed frame, should let down in front, on hinges, by a string and pulley. If it is through a window, or opening in the wall or roof, a small platform, or alighting board, should be placed outside, and a lattice-door may be made to pull up, and close the space, so as to secure all the Pigeons in the loft and yet admit light. The floor of the loft must be well secured, to prevent rats or mice getting in; and a door, well-fitted, for the same reason, is necessary, to enter the loft to inspect the birds or take the young ones. Nest places may be arranged all round, against the upright walls, by nailing up boards eight or nine inches wide, like shelves, fifteen inches above each other, and dividing these by partitions at every three feet, and nailing a board up in front at each end of these divisions, so as to form a recess at each end for the nests. A small slip of wood, running from back to front, completes the nests, which are thus divided into pairs; or, failing the upright walls, boards may be nailed along the rafters, like shelves, one over the other. Small pieces of board should be nailed in behind, between the rafters, and a long slip in front of the board. Thus converting the shelf into a sort of trough, which can be divided into nests by simply nailing an upright piece of board against each rafter. This makes an excellent pigeon-house for common Pigeons or Toys.—B. P. BRENT.

(To be continued.)

WEEKLY CALENDAR.

Day of Mth	Day of Week.	JUNE 15—21, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
15	Tu	Aphelexis rosea	29.929—29.904	74—42	E.	—	44 af 3	16 af 8	29 af 11	4	0 0	166
16	W	Aphelexis purpurea	30.073—29.907	74—50	E.	.01	44 3	17 8	43 11	5	0 17	167
17	Th	Aphelexis sesamoides	30.130—30.021	79—44	E.	—	44 3	17 8	55 11	6	0 29	168
18	F	Beaufortia latifolia	30.159—30.122	75—48	E.	—	44 3	17 8	morn.	7	0 42	169
19	S	Banksia erieifolia	30.067—29.947	73—59	E.	.62	44 3	18 8	6 0	8	0 55	170
20	SUN	3 SUN. AFTER TRIN. Q. VIC.	29.925—29.915	80—58	S.E.	.68	44 3	18 8	17 0	9	1 8	171
21	M	Q. VIC. PROCLAIMED. [Acc.	29.637—29.917	79—55	S.E.	—	44 3	18 8	29 0	10	1 21	172

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 72.1° and 49.6°, respectively. The greatest heat, 93°, occurred on the 19th, in 1846; and the lowest cold, 30°, on the 20th, in 1855. During the period 113 days were fine, and on 104 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

IN dry weather, keep down weeds with the hoe; dig vacant pieces of ground, to be ready to take advantage of the first shower of rain, for planting out the main crops of vegetables. Apply water liberally to seedling and more mature crops, and mulch the ground, where practicable, with short grass, or litter, to prevent evaporation.

BROAD BEANS.—Sow, and give the open drills a good watering before the seeds are covered up; pinch off the tops of all that are forming their pods.

BROCCOLI.—If dry weather, water the seed beds of the late crops, and all that have been lately pricked out. Make the last sowing of the *Walcheren*.

BRUSSELS SPROUTS.—Plant out, after a shower of rain.

CABBAGE.—Sow the *Early York*, *East Ham*, or any other middle-sized early variety, of close growth and quick hearting, for what is called *Coleworts*; to be afterwards planted on poor ground, for winter and spring greens.

CELERY.—Continue to plant, and water the early crops abundantly. If dry, they are apt to run to seed.

CUCUMBERS.—Water, if dry, two or three times a week; and sprinkle over the leaves, to refresh them, every afternoon.

GERMAN GREENS.—Plant out a good breadth in showery weather.

HERBS FOR DRYING.—Gather while in perfection.

KIDNEY BEANS (DWARF).—Sow a good crop for the autumn. Water the drills before planting them.

LETTUCE.—Sow for succession. Thin, and transplant former sowings; to be watered when planted, and afterwards, at times, till they have taken fresh root hold. Where it can be done, they should be planted on a north border at this season, as it is difficult to have them crisp and tender in hot weather, if they are fully exposed to the mid-day sun.

LEeks.—Plant, if sufficiently strong for removal, affording them an open piece of very rich, deep soil. Plant them either in continued rows, nine by six inches apart, or in beds, six rows in each, and six inches distant in the rows.

ONIONS.—Transplant, if necessary.

PEAS.—Sow the *Early Frame*, or *Wrinkled Marrow*. Water the drills, as recommended for *Beans*; and water, if the ground is parched, the crops coming into bearing, to swell out the pods; as they will cast nearly all their flowers if water is not supplied. Continue to stick the advancing crops.

RADISHES.—Sow, and shade the beds with mats.

SCARLET RUNNERS.—Sow for a late supply, and stick the advancing crops.

TURNIPS.—Sow, and thin former sowings.

FRUIT GARDEN.

APPLES, APRICOTS, PEARS, and PLUMS.—Continue

to look over the trees for the curled leaves in which the maggots are found, to destroy them before they injure the young fruit.

FIG TREES.—Pinch the points out of the young shoots, when they have made four or five joints, to obtain stocky and fruitful wood for next crop.

FRUIT TREES.—Persevere in stopping the breastwood on all trained trees, whether wall, espalier, or pyramidal, and in nailing or tying-in the young shoots, as they extend.

STANDARD TREES.—Remove useless branches, and thin.

STRAWBERRIES.—If dry weather, to be thoroughly soaked with water, to swell the fruit.

FLOWER GARDEN.

As the flower-garden stock is now very generally bedded-out, and growing freely in their summer quarters, there will be more time to attend to the propagation of the most favourite hardy plants; and now is the most favourable time for getting in a good supply of cuttings, of such things as it may be desirable to increase. Stir the surface of the soil among the plants in beds, which will keep down weeds, and greatly encourage the growth of the plants. All decayed flowers and seed-pods in the beds or borders to be cut off, if not wanted for seed.

BROMPTON and QUEEN STOCKS.—Sow in a shady situation.

CARNATIONS and PICOTEES.—Disbud, and tie the pods.

CHINA ASTERS and TEN-WEEK STOCKS.—If not already done, to be planted out where they are to flower.

DAHLIAS.—To be attended to as they grow, tying up the four or five main shoots to their stakes; as they are easily blown over, and the plants ruined for the season.

HYACINTHS.—Take up the bulbs, and dry them in the shade.

PANSIES.—Increase by cuttings.

PINKS.—Tie the pods, and continue to propagate by pipings.

ROSES.—Trim up stocks, and water the blooming plants abundantly; search for the curled leaf, to prevent the ravages of the rose maggot; and ply the engine, or syringe, to dislodge the green fly.

WILLIAM KEANE.

HORTICULTURAL SOCIETY'S SHOW AT CHISWICK.

A VERY good average show; a highly select company; not so numerous, however, as in the good old times, in June; the arrangements in the same style as last year, and the garden never in better order. The writer, however, having lost one of his warmest and most sincere personal friends, the late director of this

garden, he will be allowed, on this occasion, to express the mournful interest he felt in all the improvements over the garden.

The Queen and suite were there as early as ten o'clock, and took a leisurely, business-like survey of all that was in the Exhibition. Her Majesty was plainly dressed in mourning, and she looks better in mourning than most ladies. The business of the Judges is allowed to be of such importance, that the presence of Her Majesty, in any one of the tents, or sections, does not interfere with their work in the slightest degree, beyond taking off their hats, and remaining uncovered during the time Her Majesty is present. They, the Judges, may be in the heat of an argument on the merits of a new plant, or of a collection of plants, and they merely lower their tone when "the Queen is coming;" but they hold their ground and their argument all the royal party are at their elbows; they then fall back a little, to allow the royal procession to pass, and set to it again, with all the earnestness of Judges, who value their own prerogatives just as much as the privilege of being in the immediate royal presence.

While some of the new Council of the Society, who were in the rear of the procession, looked exactly as if they were being led up to be executed for high treason, one of the high officials made himself too officious by half. That was once the fault of Dr. Lindley, when he first began to conduct Her Majesty on these occasions, but now the Doctor can be as much at his ease talking to the Queen, as Sir Joseph Paxton, or Mr. Marnock. I mention all this for the use of young gardeners, and young people in general, for nothing is more unfortunate than natural bashfulness, or more offensive to good breeding than the opposite of bashfulness.

I began my rounds in the large conservatory, with two collections of Ferns, and twelve plants in each. Mr. Baillie had the first, and Mr. Carson the second prize for them: then six Ferns from Mr. Godey, first prize in sixes: then a fifteen Orchid collection from Mr. Rucker, which had the first prize. Here were *Lalia purpurata*, with eight most noble blooms; *Calogyne pandurata*, with two long racemes; a nice *Barkeria spectabilis*, *Cattleya lobata* (red), and *Farmers* (white). The rest were more common, but in the highest style of growth and bloom. Mr. Godey followed, and had the second prize in fifteens. He also had *Lalia purpurata*, *Cattleya superba* and *lobata*, with *Dendrobium terriei*, among his plants. Mr. Keele was third. He, too, had *Lalia purpurata*, *Anguloa Chlorisii*, *Cattleya labialis*, a fine *Pleurocorymbosa major*, and *Tanda cress*. Then, six Ferns and ten Orchids from Mr. Morris, which brought us to the centre of the space: and here two large Aquaria stood: then ten Orchids from Mr. Rhodes, and six ditto from Mr. Green, taking the first prizes in sixes. Here began an immense collection of plants from Mr. Veitch, which occupied nearly one-half of both sides of the house, and the whole of the farthest end. Most of the plants were in bloom, and all free for the good of the Society, and also for the good of other Exhibitions; for there is not one more exhibitor, public or private, in the three kingdoms, who could stand a chance against this assemblage of plants, if they were in competition. Fourteen yards of this space were occupied with Orchids and Pitcher Plants, with tall, fine-leaved plants behind them; and thirty-six yards of space were filled with a general collection. *Lanata* is the largest flower of all the Pitcher Plants, and *sanguineum* the richest looking. *Ouceirandra fenestralis*, with twelve leaves, and two dried leaves to show the size; *Lalia neopalis*, *purpurata*, and a lighter variety of *purpurata*, *Cypripedium*

Lawi, a large *Mollisia*, *Ceanothus*, *aspidistra*, which ought to have been *salpiglossis*, or long *Willow*. The lowest *Mammarias*, *Heaths*, *Anahis*, *Rhododendrons*, *Pines*, *Rocks*, *Caneas*, *Dragons*, *Trees*, *Cedars*, *Rhododas*, and *Palms*; then *Amorcanthids*, *orchids*, and *nerveles*, among which were the fine new, hardy, Holly-leaved Olive, from Japan; *Chloris*, *Phacelia*, in fine bloom; *Thalictrum*, *delicatum*, new kind of *Salpiglossis*, with orange-scarlet flowers; *Stachys*, *Angeli*, five or six feet high; *Thalictrum*, *Imperialis*; *Arabis*, *Nicotiana*, with many more fine-leaved plants, and the standard allowance of variegated plants, Ferns, and *Lyopods*. The Society was highly gratified with Mr. Veitch for this turn of the day; but in May, 1868, just this time twenty years, the governing body of the Society were in high delirium at D. Boston, for awarding a £25 gold medal for just such another contribution as this from the Exotic. When I broke the crust of the old apple-pie—to let up the variegated plants, the out-of-the-way plants, the fine-leaved plants, and the most curious plants, whether they were in or out of bloom—and the Council adopted this day for the first time, what I earnestly wished them to do twenty years back, they allowed the highest collection of twenty stove and greenhouse plants to be put up in bloom, or not in bloom, at the option of exhibitors; and the change put the Judges on a false scent, for they made a glaring blunder in the third-prize collection of twenty such plants; and yet they were the best Judges in England, to my own knowledge; which shows that we are all of us, more or less, tied up in red tape.

After Mr. Veitch came the Messrs. Jackson, of Kingston, with a fifteen-plant collection of Orchids, for which they took the first prize in the nursery class. Among them were *Azide*, *Feldbergi* (the Fox Brush), *Cattleya Mossii* and *M. superba*, *Anguloa Chlorisii*, and *Lalia purpurata*. Then six Orchids from Mr. Dodd; then twenty stove and greenhouse plants from Mr. Morris, taking the second prize, instead of the third or fourth prize; then twelve variegated plants from Mr. Morris. A basket of the yellow variegated *Hydrangea* from Mr. Saker, of the Versailles Nursery, Hammer-smith. A collection of new plants, from the Pine Apple Place Nursery, in which were seven or eight new Begonias, *Cyclopolygonum*, *napellum*, *Polygonum*, *spumosa*, and *Corymbolobrya*, *argyrea*; six Orchids from Mr. Hamp; six ditto from Mr. Godey, taking a fourth prize; six Orchids from Mr. Holder, gardener to the Rev. E. Colledge, Eton College, taking a third prize; and six Orchids from Mr. Wooley, getting an extra prize. Then Mr. Wooley again, with a collection of ten Orchids, taking the first prize for tens. He had *Azide*, *Feldbergi* and *crispum*, *Schellia macrantha* (with four blooms), and *Deciduous Farmers*; all very good. Then Mr. Keele, with ten Orchids, taking the third prize; and followed by Mr. Carson, who took the second prize in tens, with very fine-bloomed matched and model plants of *Azide*, *abundant*, *roseum*, and *odoratum*, *Album*, *Sarcobolium*, *guttatum* and *retrosum*, *Cypripedium*, *Lawi*, and *Canadensis*, *purpurea*. This ended the conservatory.

Pelargoniums were fine, fresh, and flowery, in three classes: *Florus*, *Pelargoniums*, *Fancy*, *Geraniums*, and *Spotted Geraniums*; also scores of seedlings. But the greatest novelty was in the "planting for effect." The large florists' *Artemises* occupied a circular tent, with three stages, rising one above the other, and six plants in each collection: which would give two plants on each stage, in "running" stages, but not on stages which diminish as they rise towards the centre pole of the tent. There must be three plants on the first stage, two plants on the second, and

one only on the top stage; therefore, the key plant must necessarily be the centre plant of the three in front. Now, mark me! this is really worth studying. There are only two ways of matching plants, or beds, or anything else, on each side of a centre plant, or centre anything: the one is, to have the right and left plants of exactly the same size; the other, to have them of the same size and of the same tint of colour. Usually the florists give their idea of variety by setting their flowers the one colour against the other. Ladies, who are artists, never do that; they make variety by harmony, not by contrast. Mr. Turner, of Slough, is reckoned to be one of the very best of the florists; but he never fails to adopt the ladies' way of setting plants, or colours, when he has a chance; and the chance of the circular tent was perfect for the purpose. Here is how he put them. First, *Sanspareil*, the best of all the spotted flowers, in the centre of the front stage, next the eye of the spectator. On one side of *Sanspareil* stood *Rose-Celestial*, and *Agnes* to match it on the other side. They were a double match, in size and in colour. On the second stage stood two plants, quite different from the three in front, but as near in looks as possible; they were *Governor-General* and *Saracen*, two of the best scarlets; and the one plant on the top shelf was *Carlos*, a very large plant,—*Carlos* being in the style of the two match plants right and left of *Sanspareil*. The picture was harmoniously complete, and a "painter's eye" would never weary at looking on it.

The Messrs. Fraser made the same attempt, but their collection of six wanted one kind to match. *Lucy* was their middle or key plant, in front, and *Lord Raglan* and *Saracen*, two scarlets, matched on each side of the centre; but their next two, *Optimum* and *Topsy*, did not quite agree in tint; and *Carlos*, five feet through, at the back, being more in the way of *Lucy*, than in the way of *Lucy's* sides. Match plants was a second hitch, but it was a bold attempt at getting out of the tight-laced stays of the florist, of which stays there were several pairs round this tent; and the best of them was in Mr. Dobson's sixes. His centre front was *Eclipse*; on one side he put *Rose-leaf*, which is a red, and opposite, he placed *Gem of the West*, a good white kind,—the two match plants being diametrically opposed in colour. The next two were the same, but "crossing" with the front ones; thus, *Governor-General*, a scarlet, over the white; and *Evelyne*, a white, over *Rose-leaf*; and *Emperor* at the back. The way Mr. Turner and most of lady painters would place Mr. Dobson's plants would be thus:—*Eclipse*, or *Emperor*, the key plant; *Evelyne* and *Gem of the West* on each side of it; then *Rose-leaf* and *Governor-General* the next two; and *Emperor*, or *Eclipse*, at the back. Mr. Turner was first, Mr. Dobson second, and the Messrs. Fraser third. Mr. Nye, gardener to E. Foster, Esq., was first in the amateur class; Mr. Higgins, gardener to E. Beck, Esq., second; and, I think, Mr. Holder, third.

In the fancies, Mr. Turner was first, Messrs. Fraser second, and Mr. Gains third; and a collection from Mr. Hodson, Hampstead, had the first in the amateur class. These fancies were very evenly matched; but some which were in another tent, and placed alongside of the spotted kinds, were drowned, as far as effect was concerned. To make the best of Geraniums, the three great sections of them should never be exhibited side by side, as at the Crystal Palace, and as used to be the case at Chiswick.

The collections of stove and greenhouse plants were all good. For a collection of ten of them, in bloom, Mr. Dods was first; and also first in twenties, in or out of bloom. Mr. Cutbush, of Barnet, was second in twenties, and the Messrs. Jackson third. Mr. Carson

was first with Azaleas, in collections of eight plants; and Mr. Green first in sixes. Mr. Ivery had a first-class certificate for his new seedling Azalea, *Gem*, which I said, from Regent Street, was the best of his cut blooms. *Gem* belongs to the dwarf kinds, with small leaves, and the flowers are florist shape, and in colour near to *Stanleyana*, one of the stoutest flowers of the older Azaleas.

Cut Roses, Pansies, and Ranunculuses, in the old style. Odds and ends included *Berberis Bealei* and *Japonica*, both in fruit, from Mr. Standish; a fine Rhododendron, called *Perfection*, with a blush flower, from Mr. Standish; *Spiraea Reevesiana*, double as Chamomille, from Mr. Standish; a streaked inside Fuchsia, from Mr. Smith, Hornsey Road; also, a variegated-lilac Verbena, called *Striata perfecta*.

The best seedling Pelargoniums in Mr. Turner's lot were—*Ariel*, *Lightning*, *Glowworm*, *Peacock*, *Osiris*, and *Excelsior*. Mr. Turner had the first, and Mr. Dobson the second prize for spotted Geraniums, of which *Conspicua*, which is the nearest to *Sanspareil*, and *Spotted Gem*, were the two best. One, called *Osiris Odier*, is a streaked kind, in the colour of *Eugene Duval*, which is a new tint; and another, called *Pescatore*, is an out of the way colour and style of bloom.

There was a beautiful new Clematis, with deep, wavy flowers; a variety of *Florida*, called *Atroroseacea*; and a plant of *Rhododendron Maddeni*, from Messrs. Henderson, Pine Apple Place. A *Mirbelia floribunda* appeared in Mr. Cutbush's large collection, which was not shown before at Chiswick.

A clump of hardy variegated plants, from Mr. Salter, consisted of *Artemisia vulgaris*, *Hemerocallis fulva*, *Melissa grandiflora* and *officinalis*, *Tussilago*, *Dactylis glomerata*, *Funkia undulata* and *albo-marginata*, and others. Most of them would make rows, here and there, in the ribbon style of planting.

Roses were fine indeed. Mr. Lane first; Mr. Paul, and Messrs. Fraser next; and Mr. Francis third. Each had a circular clump, and put dwarf plants round the outside to hide the large pots, which had a good effect. *Madeline* (a white hybrid China), and *Duke of Cambridge* (a damask), both in Mr. Paul's collection, were the greatest strangers. Mr. Ivery, who had the first prize for eight, had *Pauline Plantier* for a centre, a most beautiful plant, and a *Coupe d'Hebe*, in Mr. Lane's collection, was the most perfect beauty he ever brought out.

Here, Mr. Glendenning exhibited a clump of the new Larch, from the north of China, with a gorgeous edging of specimen plants of *Farfugium grande*.

FRUIT.—The prize cards were not placed to the winning lots when I "took the fruit." For an extra prize, which was offered by Mr. Dilke, for a basket of *Black Hamburg* Grapes, there were eight competitors:—Mr. Ingram, gardener to Mr. Blandy; Mr. Enston, gardener to Sir J. Duckworth, Bart.; Messrs. Clement, Oakhill; Smith, St. Margaret, Isleworth; Frost, gardener to G. Betts, Esq.; Mould, gardener to P. Rose, Esq., Wycomb; and Hill, the great Grape grower of Keele Hall. All the lots were really good. Mr. Fleming, of Trentham, had a first-class prize for four pots of his new *Black Trentham* Grape, which he is selling now as fast as he can get it packed. It is after the *Black Prince* in the shape of the berry; and, having tasted it, I can pronounce it to be a most delicious Grape. There were two or three dishes of Apples; as many Pears, Oranges, Lemons; six dishes of Figs, one of Cape Gooseberry, and one of Rose Apple. The Rose Apples (*Jambosa vulgaris*), which were green, and like young Pomegranates in shape, came from Mr. Iveson, gardener to the Duke of Northumber-

land, at Sion House, who had also Vines in pots. Ten dishes of Strawberries, thirty-three Pine Apples (the heaviest being over 9 lbs., from Mr. Baily, Shardeletes); twenty-two dishes of Peaches and Nectarines, and ever so many Melons, and Cherries, gathered, and on plants in pots, of which there was a goodly row of other fruit trees, were the best samples of healthy growth I remember to have ever seen exhibited.

After seeing all the fruit and flowers, the royal party went over the tents and garden machinery department, and remained a long time admiring the handsome conservatory, which is put up in first-rate style by Mr. Ormson, the hothouse builder, of Stanley Bridge, King's Road, Chelsea, for the purpose of showing the gardening world what can be done for love and money. Whether the Queen intends to buy this handsome conservatory for Osborne, or Balmoral, or to send it to Berlin, to the "daughter of England," no one knows, because no one happened to be there to take the order from Her Majesty. But, surely, when the Queen of England looks over boilers, hot-water pipes, watering-pots, nets, screens, hoes, rakes, and all manner of tools and implements, and then turns to the grand display of glass houses of kinds, there ought to be some one to answer royal questions.

Messrs. John Weeks and Co., of the King's Road, Chelsea, as usual, exhibited several sizes of their very powerful tubular hot-water boiler, of the same construction as those which they fixed at Messrs. Hendersons' Nursery, and several other large establishments, now so generally known as Weeks' One-boiler System. They also exhibited some very superior brass valves, for stopping the circulation of hot water. Also various forms of pedestals and stacks of pipes, showing that a hot-water apparatus can be made ornamental, of various designs, suitable for conservatories, or entrance-halls, or even for a drawing-room. They also exhibited many models and drawings of conservatories, some very elegant in design. Also, other horticultural buildings, suitable for every required purpose.

D. BEATON.

[We will give the prize-list for fruit next week.—ED.]

MACHINES AND IMPLEMENTS.

On Tuesday last, a trial of mowing machines took place, at the Gardens, before a large company of gentlemen, who appeared to take a lively interest in the matter. The spot selected for the competition, was a portion of the Arboretum, where the ground is of uniform surface, and the grass of equal length and thickness. A certain space was allotted to each exhibitor, on which to operate with his machine, and about two o'clock the proceedings commenced. Colonel Challoner, and Mr. Easton, of the firm of Easton and Amos, engineers, Southwark, were appointed Judges; and the manner in which they performed their arduous and delicate office, met with universal admiration. The machines present on the occasion were those of Messrs. Shanks and Co., Arbroath; Mr. Ferrabee, of Stroud; Mr. Samuelson, with Boyd's patent sharpener and cleaner; and Mr. Green, of Leeds. They were all of the same length in the cutter, namely, twenty-two inches, except that of Mr. Green, which was twenty-four inches, and were worked by two men,—one drawing and the other pushing. Each of the machines worked six minutes thirty-five seconds, and then the surface of grass it had cut was measured, and the machine itself examined. After each machine had performed its work, it was suggested that trials be made of the way in which they cut round the trunks of trees; accordingly, four trees were selected, lots were drawn for places, and the work was executed. The Judges then retired to consider their decision, and the principle on which they decided, was by the quantity of square feet cut per minute, and by the quality of work, construction of machine, and lightness of draught; the three last being decided by points, the maxi-

imum of excellence being represented by sixty. On the return of the Judges, the following decision was announced:—

	Time.	Number of Square Feet cut.	Quantity cut per Minute.	Quality of Work, represented by Points.	Construction of Machine, represented by Points.	Lightness of Draught, in Points.	Total Points.	Price.
	m. s.							£ s.
Green ...	6 35	1,600	242	50	50	60	160	8 10
Shanks .	6 35	1,302	197	45	50	40	135	7 10
Ferrabee	6 35	1,503	228	15	45	50	110	6 0
Deane ...	6 35	1,046	158	25	10	60	95	6 8

(Signed)

C. B. CHALLONER.
EDWARD EASTON.

The decision was just what was anticipated, all present being satisfied of the manifest superiority of Green's machine, both in construction, lightness of draught, and superiority of work. One of the great advantages the machines of Green and of Shanks have over the other two is, the provision made for turning, by which the smallest curve can be made as easily as with a wheelbarrow; and, in this respect, these had the decided advantage in going round the trunks of the trees, which they did close up to the base, while the others laboured hard and did not reach it.

In that part of the garden allotted to the structures and implements, the most prominent objects are two conservatories,—one erected by Mr. Ormson, of the King's Road, Chelsea, and the other by Mr. Gray, of Danver's Street, Chelsea, both of which are chaste and elegant in their design, and durable in their construction; but that of Mr. Ormson is very much larger than the other. Here we observed a large collection of *Artificial Fruit*, exhibited by M. Alessandrini, of Lyons, but at present residing at No. 3, Queen Street, Golden Square, London. It consisted of many kinds of fruit—Apples, Pears, Plums, Peaches, Figs, Walnuts, Chestnuts, and Cherries. The Apples, Pears, and Plums, were admirable, as were also the Chestnuts, but all the others were failures. Some were the finest we had ever seen done artificially, particularly the specimens of *Gloria Mundi* Apple; and *Duchess d'Angoulême*, *Beurré Diel*, *Beurré Clairgeau*, *Easter Beurré*, and *Vicar of Winkfield* Pears. The material used is a composition of a resinous substance, mashed paper, and plaster of Paris; and has the advantage over wax of being remarkably strong, and not liable to crack, by changes of temperature, as that substance is. In Mr. Gray's house were several examples of *Maw's Geometrical Mosaic Pavements*, in many various designs: and some ornamental pots exhibited by Messrs. Apsley Pellatt and Co. Close by, we observed an example of a new mode of glazing, invented and exhibited by Mr. John Sangster, of Cumberland Place, Newington Butts. The principle consists in securing the glass without putty; allowing the free expansion and contraction of the glass, when under the alternating influences of heat and cold; and in the facility with which repairs can be executed. The plan is very simple, and appeared to us to be a decided improvement on the old method; as it is not merely a more speedy mode of glazing, but, by the mere removal of a few strips of wood, the whole of the glass may be removed at pleasure, either with the view of cleaning between the laps, or of conveyance to another place.

Messrs. John Weeks and Co., of the King's Road, Chelsea, had a marquee erected in the Arboretum, where they exhibited examples of their garden structures. A long tent, extending the whole length of the implement inclosure, was occupied by Messrs. Gidney, of Dereham, with a very extensive collection of garden implements of all kinds, and articles of domestic use,—such as Cucumber slicers and Kidney Bean cutters,—and also a large stock of garden thermometers. The other exhibitors, in this part, were Messrs. Neighbour and Son's, with bee-hives; Apsley Pellatt and Co., with ornamental pottery; and Mr. Hill, of the Haymarket, with garden cutlery. In Ewing's glass walls, were collections of mathematical and philosophical instruments, from Mr. Casella, of Hatton Garden, among which we observed his very excellent maximum and minimum garden thermometers, with zinc scales, which never corrode nor become obliterated; also, a gardener's microscope, a rain gauge, and other instruments of that description. We have had some experience of Mr. Casella's garden

thermometers, and can recommend them most strongly for steady and correct action: what we admire so much is, that both of those we have always indicate the same, showing how carefully they have been made according to the same standard. Messrs. Negretti and Zambra also exhibited a collection of similar instruments.

In a long tent in front of the glass walls, was a large collection of pumps, India-rubber hosing, and fountain designs, from Messrs. Warner and Son. Alongside of this, we observed an extensive stock of garden implements of all kinds, from Messrs. Deane's, of London Bridge, amongst which the Paxton watering-pot particularly attracted our notice. The nozzle, or rose, instead of being merely slipped on, is screwed on by a thread screw, so that it cannot fall off; and the bottom of the spout, on the inside of the pot, is covered with a cone, perforated with holes smaller than those of the rose, so that it is impossible for the latter ever to fill up.

The boilers, both in number and variety, are perfectly bewildering, and each thinks his own the best. This is a subject on which we shall not attempt to give an opinion, as it is impossible to say how any boiler will answer till it has been tried. Many unforeseen circumstances may arise, which, in practice, would render any boiler, however theoretically perfect, entirely worthless; but that our readers may get some idea of the construction of these apparatus, we shall from time to time take notice of the most important, illustrated with engravings.

A GLANCE AT GORHAMBURY.

THIS massive and elegant residence of the Earl of Verulam, is placed in a commanding position, in the centre of a splendid park, well furnished with noble specimens of Oak, and other timber, and at the distance of about two miles from St. Albans, to which there is now a branch rail from Watford. A massive dignity is given to the mansion, not only by its size, but also by the fact, that whilst many other fine houses in the county are built with brick, and, perhaps, painted in imitation of stone, this is wholly built, or cased, with the real material. The entrance-hall is reached by a wide and lofty flight of steps; and, from the platform at the top, fine peeps are obtained of the Abbey, and other churches, and principal buildings of St. Albans,—especially at those periods of the year when the dense foliage of the fine timber does not prevent the eye sweeping over the park, and the interesting, from association, valley of the Ver, to rest upon the heights of St. Albans.

This entrance-front faces the east; the offices are clustered on the north side. Inclosing these, and proceeding a considerable distance, a close fence bounds a large space of ground for walks and shrubbery; then, turning to the west and the south, shuts in a space, on the west side of the mansion, of about sixty yards, and considerably wider to the south, for flower and ornamental gardening. A stone fence separates the park from this flower garden, for at least the width of the west front; the mode of doing so will presently be alluded to. Beyond that west front—say, perhaps, five hundred yards distant—is placed the large kitchen garden, surrounded, also, with a similar close fence, which furnishes wide slips round the walled part of the garden. On what I suppose to be the south-east side of this kitchen garden, the side next to St. Albans, are the interesting ruins of the mansion of the great Lord Bacon, peeps at which can be obtained from various parts of the pleasure ground. The mansion, garden, and pleasure grounds stand upon an elevated plateau, not much different as respects their level. Keeping these faint traces in view, the youngest reader will be able to follow me.

Few places have been more improved in a short time, both as respects ornamental and profitable gardening, than Gorhambury, under the management of

our old friend, Mr. Bogue. In thus glancing at gardens, if the expressed opinions of others are at all to be looked upon as a guide, I must come to the conclusion, that the mere expression of satisfaction has been less valued than what has been advanced in the way of criticism and suggestion. I will endeavour to meet both circumstances in the present case.

In the pleasure grounds are some fine specimens of Cedars, &c., some forty years of age, but they were blocked up and concealed, as to their beauty, by masses of Laurels, &c. These have been relieved, and beds for flowers and Roses, &c., too near them, turfed over to give expanse and freedom. Round the south and west front of this noble mansion, a narrow walk passes, leaving, perhaps, ten or twelve feet of turf between it and the walls. This small space was frittered thickly over with flower-beds, and standard Roses, just as might be done in a little suburban garden. These have all been cleared away, and, so far, a freedom and dignity given to the mansion. Along the west side, fronting the offices, are some ornamental buildings, in the shape of dairy, &c. These now stand out as they ought to do, instead of being shut up, out of sight, by Laurels. Beyond these, and nearly at right angles with the mansion, is an architectural conservatory, with some flower-beds in front of it, clustered round a fountain, and that fountain canopied and pyramided with climbing Roses on pillars and chains. This, one of the finest features of the place, was shut in, and lost most of its beauty from want of space around it. The intervening objects have been cleared away, and now that pyramidal bower of Roses over the fountain, and the conservatory, form fine features from any point of the west garden front. This west-front lawn, for at least the width of that front of the house, is bounded by a wide gravel walk, from two to three feet above the level at the lawn close to the house. This lawn proceeded level for a considerable distance, and then curved gently upwards to the height of the walk, whilst shrubs and beds were scattered, promiscuously, here and there, on that space. The whole of that space has been cleared, and the curve of the lawn to the wide walk removed, by substituting a steep bank in its place, which gives it a more defined artistic form. The whole lawn is now, therefore, level. A walk from the front of the house goes across it to this raised walk, where stone steps are placed; and on each side of this central walk is a neat, well-arranged flower garden. Under present circumstances, I do not see what more could be done, in the way of improving this lawn, unless it would be the altogether removing, or throwing into a group, some scattered tree Roses between the flower-beds and the conservatory.

The first improvement that suggests itself, would be with the west front of the mansion. That, as respects beauty and proportion, is almost as elegant as the entrance-front. The principal rooms are situated there. The noble columns, with their Corinthian capitals, are equally massive; but their proportions are destroyed by a verandah, such as we might expect at a house bordering the Green Park, cutting the columns, as it were, in two. That, I understand, is to be removed; and when that is done, and a massive staircase, with stone balustrades, substituted for the present staircase, the effect will be more telling and magnificent.

In general, I am no admirer of great breadths of gravel; but, considering the size of the mansion, the walk near it might be nearly doubled in width with propriety.

I have mentioned the moving the beds from the side of the house. If it was deemed necessary to have flower-beds on the south side of the house, as well as the two groups on the west lawn alluded to, then a

new group on the south side, and farther from the walk than the beds now placed there, would be more telling, just because "relief" would be given alike to the mansion and the flowers, whilst the background to the latter would be equally good. This struck me more forcibly during my visit in the middle of last month, as the lawn there has already been greatly improved, and fine vistas opened up.

There will be no difficulty in recognising the position of the wide, raised walk in front of this west lawn. It extends only as far as the width of the house, there being steps at each end to come down to the general level. Singular enough, this is not the only instance in which such raised terrace-walks, at the distance of from thirty to fifty yards from the mansion, are to be found in Hertfordshire. Of course, when on the top of the walk, you look down on the flower groups on one side and on the park on the other, but with a wall and the ditch separating you from the latter. What is most singular is, that twelve out of twenty gardeners, and six out of ten nurserymen, whom I can recollect speaking of this walk, described it as the finest thing in the pleasure grounds. Now, I cannot but look upon this, and others so situated, as a great deformity. It might just be tolerable, as a work of utility, in a place formed out of a swamp. Every foot of elevation thus artificially gained, as you stand upon it, just detracts so much from the dignity of the mansion. It conjures up the idea, that no more proper place could be found for the earth, from a *ha-ha*, than placing it in a mound inside, and collecting there all the refuse and foundation soil left when the mansion was building. Art and labour, according to my conviction, have here been employed to constitute, not the elegantly useful, but a mere deformity. Of course, my brethren, who look upon it as a beauty, have an equal right candidly to praise it.

The massiveness of the mansion, the splendid old Oaks in the park, the size of fine old trees and avenues,—that only wanted a striking termination to make them noble,—would naturally bring a tremulous action to the hearts of most planters, in case they should by possibility plant wrong. In the space between the west lawn referred to, and the kitchen garden—and around it too—is some fine old timber, but chiefly congregated at the sides; so that there would have been a fine open space, between the house and the kitchen garden, had not the artist chosen this very spot for planting a large group of young trees. These are now large enough to stand without a fence, and to want thinning; but altogether, their obtrusion in such a position broke up the associations about the fine old trees. The best thing about that group, was a rough, irregular bordering of furze, which served as a contrast to the dressed ground within, and a connecting link with the ruins of the mansion of Lord Bacon beyond. With such a park to choose from, it was certainly a strange spot on which to fix a large group of young trees, directly in front of the mansion.

Once, when gossiping over these matters with a worthy friend, but who has just enough conservatism about him always to have a leaning to, and a defence for, things that are, he ended his usual advocacy with demanding, "Now what would you do, if you could?" Well, then, I would remove every vestige of that raised walk; I would clear away most, if not all, of that group of young trees; I would remove the fence from the west side of the lawn, and the east side of the kitchen garden; I would continue the boundary fence, on the north and south sides of the intervening space, and thus have pleasure grounds, flower garden, and kitchen garden, all inclosed within one boundary; I would take a broad, straight walk, from the front of

the house, right up to the kitchen garden, and have a new and suitable entrance there; and, along the sides of that walk, I would have beds of flowers, or American plants, backed by rows of Deodars and Araucarias. Many of these latter, and other Pines, are already growing in the Park. Here they would have a more distinct position, and the reason of the contrast with the surrounding scenery at once would be apparent.

I have nearly filled the space the editor allows for one article, and must pass the kitchen garden, with saying there is nothing there to criticise, but much to imitate. Large stacks of wood were near the houses, for here timber is so plentiful that it is used for the furnaces. The ranges of houses have all been fresh glazed and fresh heated, and all—especially a *Muscat* Grape house—extra luxuriant and fruitful. Mr. Bogue has long been a most successful forcer of Strawberries. There was a shelf of *Queen's* looking beautiful, just coming in; and a magnificent row of *Prince of Wales*, fit to gather. Many of the berries seemed from half an ounce to three quarters of an ounce. He generally lays first in small pots. He cultivates Chrysanthemums with great success, by planting out, and repotting in autumn. Large Fuchsias were in full bloom in the greenhouse, as well as two of the largest, fullest-flowered, immense bushes of Rollison's *Unique* Pelargoniums I ever looked at. All crops, in-doors and out-of-doors, were looking well. At Mr. Bogue's cottage-door are immense plants, or stools, of *Aloysia citriodora*, which are cut down every winter, and throw up strong shoots. A very fine plant of *Dielytra spectabilis* was growing on a border near the house. But that which we chiefly went to see, was a house filled with Calceolarias in full bloom. Our readers may judge how massive and thick were the flower-trusses, when plants, in six-inch pots, had dense heads of bloom from two feet and upwards across. I believe Mr. Bogue sows in the end of July, and there can be little question, as a neighbouring gardener suspected, that "he must feed them on *guanor*, or something of that ere kind." Chinese Primulas, in four and six-inch pots, had also been very fine and strong, as testified by their present appearance. Perhaps we may get hold of more of the minutiae of these matters at another time.

To the historian and the antiquary, the whole demesne and neighbourhood are replete with interest. There are the ruins of the mansion of the great Lord Bacon, of whom Pope stated that he was—

"The wisest, brightest, meanest of mankind."

Though the anecdote has been often quoted, that in passing to his trial, through his bowing servants, he told them to—"Sit still my masters, your rise hath been my fall," there is strong reason for believing, that posterity, with greater light, will judge him more leniently and fairly than his compeers, and say he was not the "meanest" of mankind. Still, standing by these ruins, one can hardly escape the conviction, that mere extraordinary intellectual power can never command true greatness, unless when associated with moral purity and rectitude. On a neighbouring height, now embosomed in thriving wood, the remains of the observatory of the great man are yet to be seen.

On going to St. Albans, you pass the remains of the walls of ancient Verulam, from the ruins of which part of the Abbey and the oldest buildings in St. Albans were built. The name of the town reminds us of the proto-martyr of England, who is supposed to have suffered about the year 280. The Abbey is supposed to have been built on the spot where Alban suffered, in the year 795, by Offa, king of the Mercians; as a

sort of penance for the double crime of abusing the claims of hospitality, and murdering Ethelbert, king of the East Angles. Some of the Abbots of that Monastery acted a conspicuous part in English history, but these are matters foreign to our work. R. FISH.

CALLS AT NURSERIES.—No. 2.

MR. WM. COLE'S, DIDSBURY, NEAR MANCHESTER.

THIS nursery has been recently established, and appears to be a thriving concern. It is situated five miles from Manchester, on the Cheadle road, and is at a sufficient distance from the long, smoky chimneys of the Manchester cotton factories. Omnibuses from the centre of that town pass by it to Cheadle every hour of the day; so it is easily reached by any one desirous of seeing how specimen plants are started, trained, and grown on till fit for exhibition.

Mr. Cole is well known as a successful cultivator and exhibitor for many years at the Metropolitan Shows, whilst gardener to H. Collyer, Esq., near Dartford, in Kent. The late Mrs. Lawrence often found, that, through the good management of Mr. Cole, H. Collyer, Esq., became a formidable competitor for the great prizes at Chiswick and the Regent's Park, where he very frequently carried off the first and greatest prizes for stove and greenhouse plants. Mr. Cole having a rising family of active, intelligent boys, determined, about four years ago, to enter into business for himself, and pitched upon Manchester as a likely theatre to exercise his skill as a nurseryman. He met with a Mr. Thorniley, who had a kind of nursery market-garden at the place above-mentioned, but, having another business to attend to, he was glad to enter into partnership with so clever a man as Mr. Cole. Eventually, however, he sold his share to his new partner; and then the business began to thrive, and has done so ever since.

At the recent Manchester Exhibition, Mr. Cole was equally as successful as an exhibitor as he was near London. Since he came to the neighbourhood, successful plant cultivation has made rapid strides, which is not to be wondered at, when there are such growers brought from London as a May, an Evans, and a Smith—men quite competent to contend with the best cultivators of the day. It is true, however, that their employers are liberal gentlemen, finding their gardeners with good plants, and means to grow them.

I visited this nursery towards the end of last month (May), and saw so many things well managed, that I took notes, and am now sitting down to write them out, and send them for publication in THE COTTAGE GARDENER, as a record and example what skill, industry, and perseverance can accomplish in a short time.

When the partnership above alluded to took place, there were on the ground one small, old greenhouse (now used as a forcing-house for Roses in pots), a frame or two, and a very small number of shrubs. Now there is a range of houses 100 feet long by 14 feet wide, and two others behind them: one filled with specimen Azaleas, in bloom; and the other with the young stock of Azaleas, a collection of stove Ferns, Gloxinias, Achimenes, Tydeas, &c.

Close to the front wall of this range there is a most excellent pit, heated with a single row of hot-water pipes, and some holes made through the wall to admit heat from the houses in winter. This pit is filled, at the proper season, with bedding-out plants, of which it holds an immense number. The front walls of many a hothouse in gentlemen's gardens might have such an useful pit placed against them.

A space of ground in front of this range is covered with five ranges of pits, with brick sides and ends, sufficient space being given between each range to allow the lights to be drawn off in mild weather. In them I observed numbers of young specimens of Heaths, and half-hardy plants, in good health. This pit system of growing young greenhouse plants is worthy of general imitation. If they are well covered up in frosty weather, the plants pass through the winter unscathed.

Then, besides these, there is a good propagating-house, with platforms, heated underneath, and covered with sand. In this sand, Dahlias strike freely, as well as many other soft-wooded plants, without any covering, except a shade on the outside roof. On a central platform, I noticed some

frames covered with glass; underneath, there were Rhododendron stocks, grafted with all the best new varieties, growing away most freely. Camellias, and the choicer Coniferae, do well grafted, and placed in such a genial atmosphere. The stocks are in pots, for the convenience of a safe removal, as soon as the grafts have taken hold of them and are safe.

Adjoining this propagating-house, there is the potting-shed, the counting-house, and a packing-shed and tool-house.

The whole extent of this rising nursery is a little over four acres, quite large enough for a beginning. It is stocked with large plots of evergreen shrubs, fruit trees, &c.

Mr. Cole has been successful in cultivating the Rose to a considerable extent. Formerly, this queen of flowers was much neglected about Manchester, the climate and soil being considered unfavourable to it. This, from what has been done here, appears to be an exploded fallacy: I saw several hundreds of bushes, as healthy and full of buds as I ever saw anywhere. A large plot of wild Briers was planted last autumn, and will soon be fit for budding. The Manetti stock, for working low, is planted largely. Mr. Cole buds them close to the ground, so that all his dwarf Roses appear as if they were on their own roots. Yet they grow far more vigorously than if they were so. I saw a large number of plants of Roses so worked,—just such as I would choose to put into pots and grow for exhibiting or decorative purposes. The *China Tea-scented*, and other rather tender varieties, are raised here by cuttings, in pots plunged in sawdust, in frames set on a good hotbed. The cuttings had been taken from rows that had been forced rather early; and, being so young, they root easily and quickly, with scarcely a single failure. After they are rooted, they are potted off, and put into one of the brick pits, then shaded for a time, till fresh roots are made, and gradually hardened off and re-potted. They are then plunged in coal-ashes, in beds, hooped over and protected through the winter by a canvass awning. Plants so raised and so protected are now being sent out, and are really nice, healthy plants, fit for anybody.

The Rhododendron is the very best evergreen shrub for the Lancashire climate. The soil in this nursery suits it admirably; and, consequently, it is cultivated largely, and will be still more so as the stock increases. The hardy Azalea also thrives well, and is almost as well suited for the soil and climate as the Rhododendron, only it is not evergreen.

The long range of houses is divided into three. The first was filled with specimen New Holland plants, as healthy as possible; the second, or central one, is devoted to stove plants; and the third to specimen Pelargoniums. On the front platforms of the two greenhouses, I noted several batches of Boronias, Pimeleas, Chorozeas, Apherexis, Lechenanlias, and other plants of a similar character. Also, a nice lot of the now favourite plant, the *Genetyllis (Hedera) tulipifera*. Amongst the bedding-out plants, there was a large lot of the best of all the yellow Calceolarias,—the *Aurea floribunda*. Also, a seedling, named the *Didsbury Pet*, a great improvement on the old *Kentish Hero*: it has better foliage, and a darker spot in the centre of each bloom, and is, besides, a hardier variety. The new variegated Geraniums are all here: such, for instance, as the *Countess of Warwick*, *Alma*, *Anna*, *Lee's Emperor*, and the *British flag*, which, I think, is the best of them all,—the truss is large and of a deep cherry-colour. It belongs to the horse-shoe leaved class, with a red circle in the centre of each leaf, banded with yellow, and a dark-green centre.

Mr. Cole cultivates a large collection of the now fashionable plants, with variegated and handsome foliage. I noticed, especially, a large collection of the beautiful *Sonerila margaritacea*.

One point in this nursery is deserving of general imitation in every nursery, and that is, broad, well-kept walks. This adds greatly to the comfort of the customers and visitors: they can move through the whole grounds without damping their shoes or dress, as is too commonly the case in many country nurseries.

The above is a very brief description of this interesting and rising nursery. Under such a spirited head, I have no doubt it will answer his expectations, and receive a due share of support.—T. APPLEBY.

ON SOME MOULDS REFERRED BY AUTHORS TO FUMAGO, AND ON CERTAIN ALLIED OR ANALAGOUS FORMS.

By the Rev. M. J. BERKELEY, M.A., F.L.S., and J. B. H. J. DESMAZIERES.

(Continued from page 148.)

* * FLOCCI DISTINCT, PERIDIA MORE OR LESS BRANCHED.

5. *C. Persoonii*, Berk. and Desm. Setosum; peridiis confertis, subramosis quandoque irregularibus; mycelio moniliforme; articulis sæpe oblongis uniseptatis. *Polychæton Avellanæ*, Desm., in "Herb." *Polychæton Persooni*, Desm. MSS. "Curt." No. 2051.

On Hazel. J. B. H. J. Desmazières. (Fig. 6.)

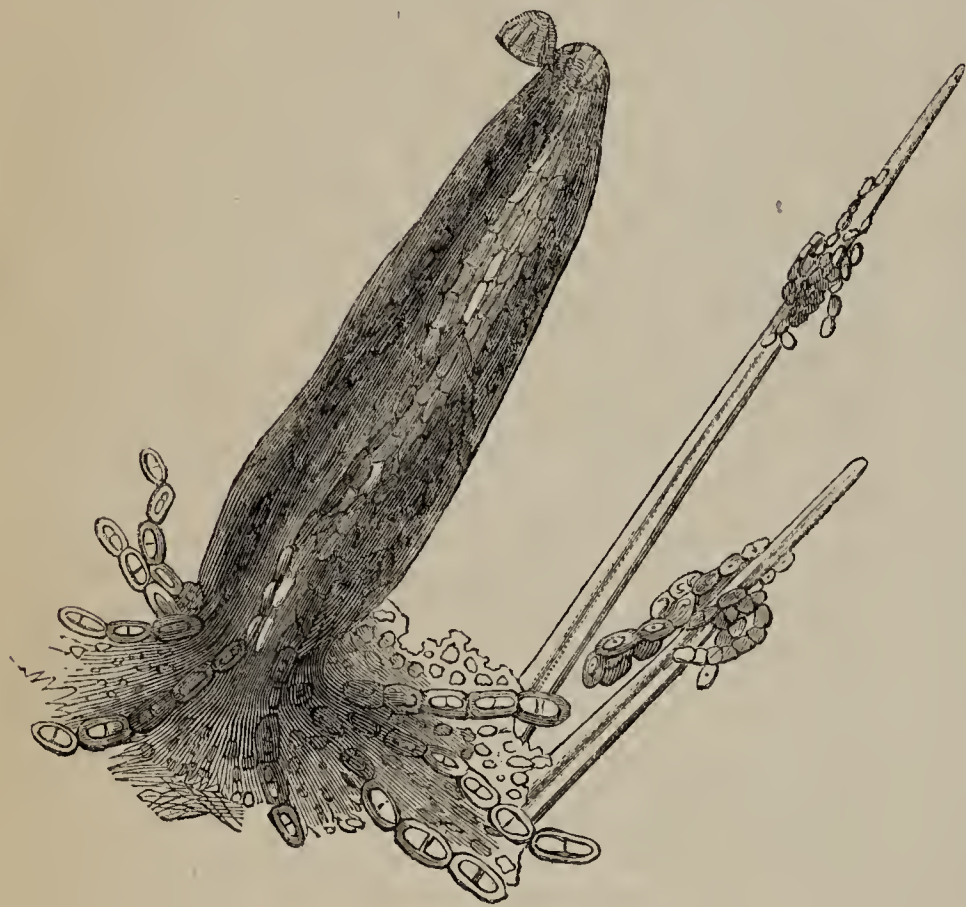


Fig. 6.

Fig. 6. *Capnodium Persoonii*, B. and D. The peridium is in this case ruptured horizontally, but this is by no means constant. The endochrome of the joints of the mycelium is frequently bipartite. Portions of the mycelium, which have been accidentally detached, are growing on the hairs of the matrix. From a sketch by Mr. Broome.

Stratum distinctly setose; mycelium moniliform; joints often oblong and uniseptate; peridia crowded, oblong, or lageniform; slightly branched occasionally, but by no means constantly; rough, with free filaments; orifice sometimes fimbriated. Sporidia imperfectly known.

6. *C. Citri*, Berk. and Desm. Sparsum, setosum; peridiis elongatis; mycelio ramoso moniliformi pulcherrimè reticulato; sporidiis oblongis minutis. *Fumago Citri*, Pers., "Myc. Eur.," vol. i., p. 10; Turpin, l. c.

On leaves of different species of Citrus. France. Persoon, Lévillé.

Stratum thin. Peridia elongated, mostly acuminate, conical, or lageniform. Mycelium consisting of beautifully reticulate branched moniliform threads. Sporidia minute, oblong; sometimes attached end to end, as observed in *C. Fuligo*, by Mr. Broome.

In this species, *C. Fuligo*, *C. elongatum*, and *C. Persoonii*, the sporidia start forth on pressure from the tip of the peridium. Asci have not been observed, but the sporidia are attached to each other, at least in two of the species, exactly as in many *Sphæriæ* of the sub-genus *Hypocrea*.

7. *C. quercinum*, Berk. and Desm. Valdè compactum crassum; peridiis fasciculatis ramosis, strato exteriori transverse fragili; mycelio parco, articulis vix constrictis. *Fumago* (*Polychæton*) *quercinum*. Pers., "Myc. Eur.," vol. i., p. 9.

On the upper side of Oak leaves. Persoon.

Stratum thick, closely compacted, easily separable from the matrix. Peridia fasciculate, lageniform, often branched, especially towards their apices, the outer coat cracking transversely. Mycelium sparing, consisting of continuous scarcely constricted threads. Sporidia unknown.

A very remarkable species, differing very much in its thick

stratum, which rises half a line from the matrix, and might be compared to a little wool-comb. Persoon had this species more especially in view when he proposed his sectional name. The ticket attached to the original specimen is as follows:— "*Polychæton. Fumago quercina*. "Mycol. Eur." 1. Très-rare. Diffère beaucoup des autres espèces, et appartient ou à un autre genre ou en fait un particulier."

8. *C. Caroliniense*, Berk. and Desm. Sparsum, setosum; mycelio parco; peridiis laxis ramosis, lateralibus elongatis lageniformibus; sporidiis oblongis bi-triseptatis.

On the under side of leaves of *Quercus obtusiloba*, South Carolina, Rev. M. A. Curtis.

Stratum thinly planted, but rising considerably from the matrix, so that the branched peridia are evident to the naked eye; mycelium thin; articulations elliptic, slightly constricted; peridia elongated, loosely branched, the lateral divisions equalling the main divisions in length, and, like them, lageniform (fig. 7). Sporidia oblong elliptic, bi-triseptate, hyaline, possibly immature. *Capnodium Caroliniense* differs from the others, in having the lateral peridia quite as strongly developed as the main ones, from whence they spring. In this

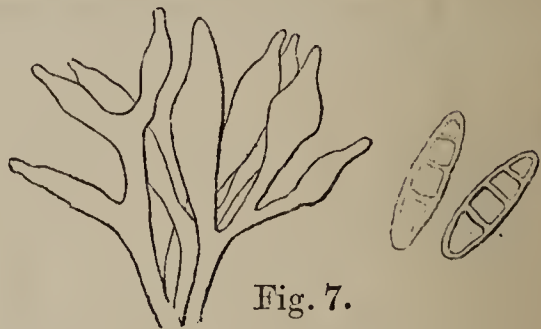


Fig. 7.

Fig. 7. *Capnodium Caroliniense*, B. and D. Outline of group of peridia and sporidia highly magnified.

and *C. Persoonii* young germinating plants, whether from sporidia or germs is doubtful, present a triangular or tricuspidate outline, the angles at length being elongated into filaments.

9. *C. expansum*, Berk. and Desm. Latè expansum velutinum; peridiis conicis brevibus connatis sæpe filamentis brevibus liberis moniliformibus obsitis; sporidiis tri-septatis oblongis curvulis. "Lea," No. 248.

Extremely common in Ohio, on the bark of *Acer nigrum*, which it clothes with a velvety stratum, rendering the trunks black. T. G. Lea, Esq. From the "Herbarium" of Sir W. J. Hooker.

Stratum widely expanded, continuous, velvety. Mycelium consisting of branched moniliform threads; articulations almost globose. Peridia conical, rather obtuse, crowded, connate, short, scarcely branched, rough from the free ends of the moniliform threads, which enter into the structure of their outer coat. Sporidia oblong, slightly curved, 3-4 septate. (Fig. 8.)

Remarkable for its widely expanded stratum and short crowded conical peridia. The sporidia possibly have not been seen mature. In this species a joint of the mycelium sometimes swells exactly as in *Antennaria*.

10. *C. australe*, Mont. Ambiens, velutinum; peridiis subdichotomis ut plurimum obtusis; mycelio ramoso moniliformi, articulis diametro brevioribus; sporidiis, ellipticis fenestratis.—"Drumm.," No. 192.

Surrounding the branches of *Coniferae*. Swan River. Mr. Drummond. From "Herbarium" of Sir W. J. Hooker.

Fig. 9. — Stratum thick, velvety. Mycelium branched, composed of moniliform threads, the articulations of which are broader than long, strongly constricted, and containing a single nucleus. Peridia more or less dichotomous, obtuse, sometimes swelling at the apex and depressed, sometimes



Fig. 8.

Fig. 8. *Capnodium expansum*, B. and D. Sporidia highly magnified. From a sketch by Mr. Broome.

lageniform. Asei broad, obovate, containing eight elliptic sporidia, which have four or five transverse and several longitudinal septa.

Distinguished from the other species by its peculiar peridia, and from all except *C. Schweinitzii*, in its elliptic fenestrate sporidia, which are not constricted at the sutures. With *C. expansum* it agrees in habit, but differs in every essential character.

(To be continued.)

THE ENEMIES OF THE GOOSEBERRY

IN your number of the 18th of May, there is an article under this title from Mr. Errington, giving an account of a rather complicated method of getting rid of the caterpillar nuisance. I can tell you of a much shorter plan, which I have practised for many years, and have never since been troubled with this pest. It is simply this:—In the spring, just sprinkle under your Gooseberry trees the *old spent tan* of the previous year, which is otherwise often in the way, and if you fail I shall be surprised. This is a secret worth knowing. I speak experimentally.—E. A. COPLAND, *Bellefield, Chelmsford*.

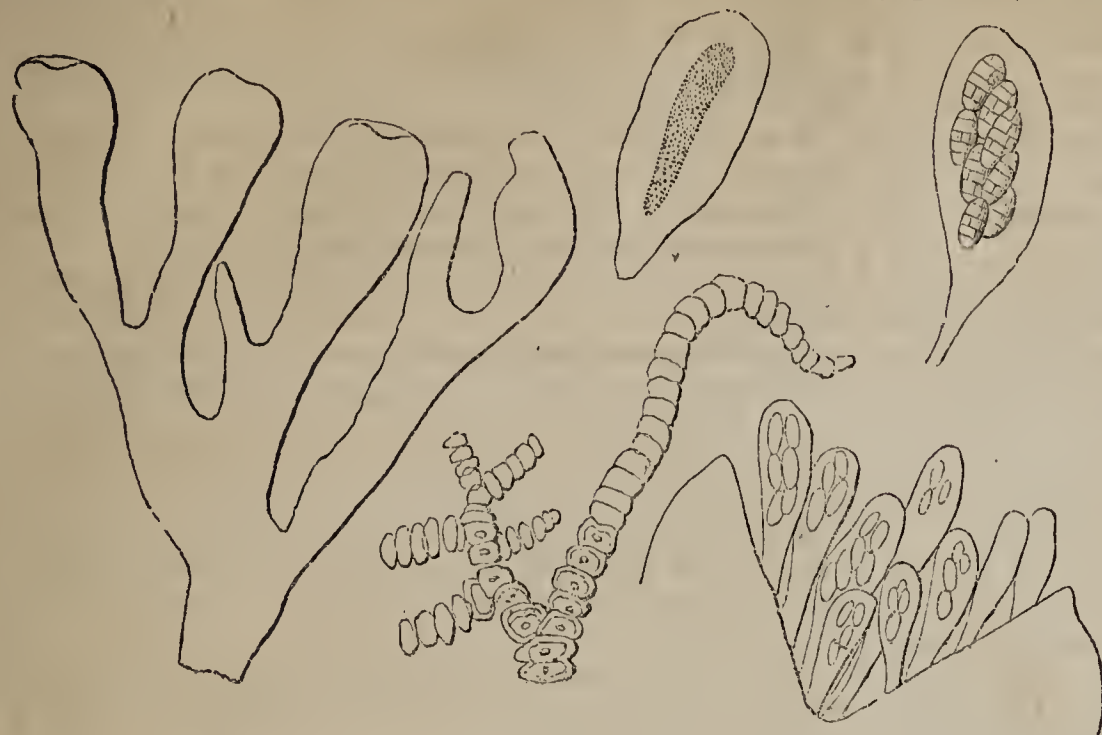


Fig. 9. *Capnodium australe*, Mont. Outline of branched peridia; a single peridium crushed, and discharging its asci; young ascus, mature ascus with sporidia, and portion of mycelium, all more or less highly magnified.

RINGING THE GRAPE VINE.

THE season is now near at hand when those who wish to try this mode of culture may do it with good effect. I am not acquainted with any fruit-bearing tree, of which the fruit can be so much improved and accelerated to maturity by ringing as that of the Vine. By this process the ripeness is forwarded about a fortnight, and the berries are nearly double in their size. The result is just the same, whether the Vine is growing out of doors or under glass. I have practised upon both for the last twelve or fourteen years, at various seasons of the Vine's growth, and to some considerable extent. Having a favoured situation round my home here, of course I have been enabled to do as I liked.

One of my walls is fourteen yards long, facing the south; and another wall is ten yards, facing the east; and the whole about seven feet and a half in height. The whole of the walls are covered with Vines. The soil is good, and the situation is good; but the wall is not, being old and in bad condition. It is not my own property, or I would remove this evil.

The Vines are principally cultivated upon the *Hoare* system, or, as it is called, the *long-rod system*; but they are not so cultivated in every case, for sometimes an old bearer is spurred back to one or two buds, to carry its crop another year. My Vines are very strong, and the rods, or branches, stand at least three feet, or even three feet six inches, distant from each other, when winter pruned. This allows just sufficient room for the fruit-bearing laterals, and a young rod to come up between every two bearers. This young rod, of course, to be the bearer of laterals the following year.

Thus, no Vines cultivated on any other system are so capable of being rung, without the disadvantage of killing or losing the future useful part of the tree; because, on Hoare's long-rod system, the whole of the previous year's bearers will have to be cut entirely away.

The very right time to perform this ringing is just after the berries are all set, or have attained the size of No. 2 shot, or small peas. In ringing, cut with a sharp knife, clean round the branch between two joints. Or, if you are going to ring the laterals carrying the fruit, leave either two or three buds and leaves beyond the main stem, and make the ring just in the middle, between the third and fourth leaves, or joints. As I said before, make two cuts clean through the bark, quite down into the wood, one inch apart, and remove the bark clean away, all round the branch or lateral. By this means, if you are in the habit of spur pruning, the hinder buds are left all right to spur back to the following year. If you prune upon the long-rod system, you may ring the rod just wherever you please,—the whole branch if you like,—as this ringed part will have to be cut away entirely after the fruit is gathered.

The ringing is performed just the same on an old whole branch as in that of the young lateral carrying one or two

bunches. I have repeatedly rung old branches, that have been carrying from twenty to thirty bunches of Grapes, with the same good effect; only it has been such branches that I have intended to cut entirely away the following autumn. Of course, thinning out the berries of the bunches, and the bunches too, if excellence is to be aimed at, is of the utmost importance. The process of thinning cannot be too early attended to. I always begin as soon as the fruit is fairly set, and continue to remove all inferior berries, and this with a good pair of scissors and clean fingers,—using my eyes to see what I am about, so as not to injure the berries by handling and mauling them.

By thus practising ringing, I have produced, for the last twelve or fourteen years, Grapes, out-of-doors, that have puzzled many a tyro, and others too.

Our indefatigable editors have both watched my progress, in the Vine culture, for years. My Grapes have many a time puzzled the late Mr. Elphinston, when he was gardener to the late Speaker to the House of Commons, now Lord Eversley, although I used to compete against him, with both in-door and out-door Grapes, at our Hampshire Horticultural Show, in November.

As a matter of course, I had read of ringing fruit trees, &c., but it never struck me to put the same into practice until about fourteen years ago, when my attention was called to it in an amateur friend's garden,—Mr. Frampton, glass and paint merchant of this city. I happened to walk in and look at some Vines, to which he was paying great attention at that time. This was in the month of September, and here I first saw the ringing process of the Vine. Seeing a few bunches of the *Black Hamburg* so large in the berry, and all ripe, I began to inquire into the particulars, when Mr. Frampton kindly showed me where the branches were rung, and that the ringing was the cause of their being so very large and so early. I then wanted to know whence Mr. Frampton obtained his information, when he showed it to me in the "Penny Cyclopædia," from the pen of Professor Henslow.—THOS. WEAVER, *Gardener to the Warden of Winchester College*.

[It is quite true that we have watched for some years, with great interest, the experiments on ringing Vines carried on by Mr. Weaver, and we can authenticate his statement of his mode of ringing, and its results. It must not be



done in that petty, timid manner hinted at by a contemporary. There must be a ring of bark perfectly removed; the cuts being made boldly down to the very young wood, or alburnum, and every particle of bark, inner and outer, must be removed between the cuts. (See engraving.)

This drawing represents, faithfully, the ringed part of a rod at the close of autumn, and shows how the removal of the band of bark checked the return of the sap, and how, in consequence, the rod above the removed band increased in size beyond that portion of the rod below the band.

The effect upon the berries was, in every instance, to advance their early ripening a fortnight, and to about double the size and weight of the berries, when compared with those grown on unringed branches of the same Vine. Nor was the colour and bloom of the berries diminished; indeed, so excellent were they, that we have seen them exhibited deservedly by the side of Grapes grown under glass, and they were sold in November, at Winchester, for half-a-crown a pound.

Ringed the branches of fruit trees, to render them fruitful, was practised in France, and recommended there in print, about one century and a half since. There are various letters upon the subject in the early volumes of the Horticultural Society's transactions, and in one of them (Vol. I., p. 107), published in 1808, Mr. Williams, of Pitmaston, gives full directions for ringing the Grape Vine. He tells the result in these words:—"I invariably found that the fruit not only ripened earlier, but that the berries were considerably larger than usual, and more highly flavoured."—ED.]

HARDY PLANTS, BLOOMING OUT OF DOORS IN MAY, IN THE ROYAL GARDENS, KEW.

RANUNCULACEÆ.—*Trollius Asiaticus*, *T. Europæus*, *T. Caucasicus*; *Pæonia arietina*, *P. arietina Oxoniensis*, *P. Davurica*, *P. tenuifolia*, *P. officinalis*, *P. officinalis rosea*, *P. officinalis albicans*, *P. officinalis atro-rubens*, *P. corallina*, *P. peregrina*; *Aquilegia Willdenovii*, *A. vulgaris*, *A. vulgaris pleno*, *A. Gébleri*, *A. Pyrenaica*, *A. glandulosa*; *Anemone Pennsylvanica*.

CRUCIFERÆ.—*Linaria rediviva*; *Cardamine macrophylla*; *Draba lasiophylla*.

RESEDACEÆ.—*Reseda alba*.

CISTACEÆ.—*Helianthemum polifolium*, *H. ledifolium*.

VIOLACEÆ.—*Viola striata*, *V. cucullata*, *V. lutea*, *V. montana*.

CARYOPHYLLACEÆ.—*Cerastium Biebersteinii*, *C. arvensi*, *C. inearnum*, *C. tomentosum*, *C. rupestre*, *C. strictum*, *C. campanulatum*, *C. Alpinum*, *C. Pennsylvanicum*; *Stellaria Holostea*; *Silene maritima*; *Lychnis diurna-plena*.

LINACEÆ.—*Linum Sibericum*.

GERANIACEÆ.—*Geranium aconitifolia*, *G. aconitifolia-plena*, *G. Phaïum*, *G. reflexum*, *G. sylvaticum*, *G. nodosum*, *G. Mexicanum*, *G. Lancastriense*.

TROPEOLACEÆ.—*Limnanthes Douglassii*, *L. Douglassii alba*.

RUTACEÆ.—*Dietamnus fraxinella*.

LEGUMINOSÆ.—*Orobis luteus*, *O. luteus occidentalis*, *O. tuberosus tenuifolius*, *O. lævigatus*, *O. canescens*; *Lathyrus rotundifolius*; *Lupinus Nootkatensis*, *L. tomentosus*, *L. Moritzianus*, *L. versicolor*, *L. rivularis*, *L. polyphyllus*; *Trifolium incarnatum*; *Thermopsis fabacea*, *T. lanceolata*; *Baptisia leucophæa*; *Vicia sepia*, *V. sepia alba*, *V. hirta*, *V. onobrychioides*; *Tetragonolobus siliquosa*; *Cercis siliquastrum*; *Robinia hispida*; *Astragalus purpureus*; *Genista virgata*; *Cytisus albus*, *C. laburnum*, *C. laburnum Adami*, *C. purpureus*, *C. sessilifolius*; *Caragana pygmæa*, *C. grandiflora*.

ROSACEÆ.—*Rosa Banksia*, *R. Banksia lutea*, *R. microphylla*; *Spiræa eanescens*; *Potentilla maculata*, *P. maculata firma*, *P. gracilis*, *P. umbrosa*, *P. grandiflora*, *P. alba*, *P. ochreata*, *P. stolonifera*, *P. rupestris*, *P. alpestris*, *P. leptophylla*, *P. Calabra*, *P. Ruthenia*, *P. Wrangilvana*, *P. dasyantha*; *Fragaria collina*, *F. grandiflora*, *F. elatior*.

POMACEÆ.—*Mespilus lobata*; *Cotoneaster microphylla*; *Crataegus*, about fifty species and varieties.

SAXIFRAGACEÆ.—*Saxifraga aizoon*, *S. aizoon minor*, *S. aizoon major*, *S. lævis*, *S. exarata*, *S. muscoides*, *S. cuneifolia*,

S. purpurascens, *S. marginata*, *S. hieraceifolia*, *S. Andrewsii*, *S. Guthriana*, *S. umbrosa*, *S. punctata*, *S. geum*, *S. hypnoides*; *Tellima grandiflora*.

CAPRIFOLIACEÆ.—*Weigela rosea*; *Lonicera involucrata*.

RUBIACEÆ.—*Asperula taurina*, *A. odorata*; *Galium caudatum*, *G. cruciatum*.

VALERIANACEÆ.—*Centranthus calcitrapa*, *C. ruber*; *Valerianella montana*, *V. tuberosa*; *Valeriana phu*, *V. asarifolia*.

COMPOSITEÆ.—*Rhaponticum nitidum*; *Bæria chrysostoma*; *Anthemis Swarziana*, *A. tomentosa*.

ERICACEÆ.—*Rhododendron Ponticum*, *R. Caucasicum*, *R. arboreum*.

VACCINEÆ.—*Vaccinium Oxyeoccus*, *V. macrocarpus*.

APOCYNACEÆ.—*Vinea herbaeca*, *V. major*, *V. minor*, *V. minor purpurea*.

POLEMONIACEÆ.—*Polemonium eœruleum*, *P. humile*, *P. Richardsonii*; *Phlox subulata*, *P. frondosa*.

BORAGINEÆ.—*Symphytum Tauricum*, *S. orientale*, *S. tuberosum*, *S. officinale*, *S. asperrimum*, *S. Bohemicum*; *Anchusa inearnata*, *A. officinale*; *Myosotis palustris*, *M. collina*, *M. sylvatica*.

HYDROPHYLLACEÆ.—*Nemophila phaeolioides*, *N. atomaria ecclestis*, *N. atomaria discoidalis*; *Phacelia tanacetifolia*; *Hydrophyllum Virginicum*.

SOLANACEÆ.—*Physochlaina grandiflora*.

SCROPHULARIACEÆ.—*Veronica gentianoides*, *V. satureifolia*; *Nemesia floribunda*; *Pentstemon procerum*.

LABIATEÆ.—*Nepeta Mussini*; *Lamium garganicum*; *Ajuga genevensis*.

PRIMULACEÆ.—*Dodecatheon Meadia*, *D. Meadia elegans*; *Primula auricula*.

PLUMBAGINACEÆ.—*Armeria vulgaris*, *A. vulgaris rubra*, *A. vulgaris alba*, *A. dianthoides*, *A. longiaristata*, *A. graminifolia*.

IRIDIÆ.—*Iris Germanica*, *I. pumila*, *I. pumila lutea*, *I. præcox*, *I. fureata*, *I. sub-biflora*, *I. flavesceus*, *I. venusta*, *I. Swertii*, *I. lurida*, *I. aphylla*, *I. neglecta*, *I. florentina*, *I. pallida*, *I. sulphurea*, *I. Nepalensis*, *I. striata*, *I. plicata*, *I. Sibirica*, *I. graminea*, *I. fragans*, *I. prismatica*, *I. flexuosa*, *I. notha*, *I. Guldenstadtii*.

AMARYLLIDEEÆ.—*Pancratium maritimum*.

HEMEROCALLIDEEÆ.—*Hemerocallis graminea*.

SMILACEÆ.—*Polygonatum vulgare*; *Streptopus lanuginosus*; *Smilacina stellata*.

ASPHODELEÆ.—*Allium sub-hirsutum*, *A. spicatum*, *A. floridum*, *A. angulosum*, *A. ursinum*.

NYMPHÆACEÆ.—*Nymphæa alba*; *Nuphar lutea*.

SECOND SWARMS.

I HAD some discussion, in Mr. Loudon's "Gardener's Magazine," for 1839, with Dr. Dunbar, on swarming, in connexion with the calling of the queen bee. On referring to my reply, at page 606, to his previous interesting paper, at page 150, I find, that part of what I did say may apply, in some measure, to what "B. & W." lately stated, respecting "putting first swarms in stock places," to prevent second ones. When speaking of these, Dr. Dunbar says, that "the same progress goes on with the next in seniority of the royal brood, provided the population be abundant; but at a shorter interval of time, corresponding with the interval between the laying of the royal eggs." He further states, "that the queen in the after swarms, hearing her rivals in their cells, attacks them: some of the bees prevent her efforts, and she in a rage goes off, taking a part of the bees with her." This is the pith of what he said on second swarms. But further experience only shows the truth of my reply, namely,—“By this it appears that the queen leaves the hive before any of her rivals have come forth, which certainly is not the case, as there are frequently several queens in after swarms. The truth is, such swarms do not come off till some queens have left their cells, when there is a general uproar in the hive, and the lady paramount, assisted by her subjects, destroys those who do not quit the hive. The same fate happens to those who mingle with the swarm.” But it is difficult to know which are chosen; most probably the stronger destroy the weaker. I need hardly observe, that frequently second and after swarms come from stocks already weakened by first ones;

much more depends on the time when the queens are bred, and the state of the weather. Therefore, the removal of the stocks cannot affect, or stop, the process which governs the laws of swarming. Nay, nothing short of extracting the brood of queens in the cells can do it,—a thing which cottagers will seldom practice.—J. WIGHTON.

NEW AND RARE PLANTS.

DENDROBIUM CHRYSOTOXUM (*Golden-arched Dendrobium*).

Imported from India by Messrs. Henderson. Flowers of a golden-yellow colour, with a particularly arch-shaped lip, whence its specific name. Blooms in March, and is then very ornamental.—(*Botanical Magazine*, t. 5053.)

RHODODENDRON ARGENTEUM (*Silver-leaved Rhododendron*).

Native of Sikkim, Himalaya, at elevations between 8000 and 10,000 feet. It is there a tree thirty feet high, with "leaves often a foot long, broad in proportion, and always silvery beneath." Flowers pink whilst in bud, white when expanded. Bloomed at Kew, in a cool greenhouse, during March, 1858.—(*Ibid.* t. 5054.)

XIPHIDIUM FLORIBUNDUM (*Copious-flowered Xiphidium*).

It has also been known by the specific names *albidum*, *album*, *cæruleum*, and *giganteum*; also as *Ixia Xiphidium*. It is a native of tropical South America, and several of the West India islands. Flowers white.—(*Ibid.* t. 5055.)

OBERONIA ACAULIS (*Stemless Oberonia*).

This Orchid is a native of Churra, in Eastern Bengal. Flowers yellow, opening in February. Requires a block of wood suspended from the roof of the stove, to allow room for its long, pendulous racemes.—(*Ibid.* t. 5056.)

POLYGALA HILAIRIANA (*St. Hilaire's Milkwort*).

Native of Bahia, in South Brazil. Leaves large and evergreen; flowers white, but not showy. Blooms in spring.—(*Ibid.* t. 5057.)

STRAWBERRY CULTURE.

A CORRESPONDENT of THE COTTAGE GARDENER complains that his *British Queen* Strawberries cannot be made to bear well. This is no uncommon complaint; and, as the time for propagating the Strawberry plant, and making new beds, is now approaching, perhaps you will allow me to make a few remarks upon Strawberry culture, which will, I think, if due attention be paid to them, remove most of the difficulties and disappointments attending it.

In the first place, the sorts must be selected with judgment, and obtained true to name. I am unable to give the results of my experience with the newer varieties, since, being so well satisfied with those of older date, I have tried but few; but the following I can confidently recommend as likely to answer the purpose of most growers. For early, take *Black Prince*, and *Keens' Seedling*; for main crop, *Hooper's Seedling* (not of the highest flavour, but a wonderful bearer); and for late sorts, *British Queen* and *Elton Pine*. The true *old Pine* I have never been able to procure, but I know that to be quite a first-rate variety.

The stock having been procured, begin to propagate at the end of June; peg the rootlets of the runners (choosing only those from the strongest plants) firmly into small 48-pots, filled with tolerably light soil, and drained. Take care to water well; in hot weather, night and morning. As soon as it is ascertained that the young plants are well rooted, sever the runners, and remove them in separate divisions to a north aspect, shaded from the sun during a great part of the day. Select an open piece of ground for the new beds, and let it be dug over, and thoroughly cleared of weeds, by the end of July. Commence planting immediately. Each plant is to be two feet apart in the row, and each row twenty inches from its neighbour; and the plants are to stand alternate, not opposite; then each one will be about two feet from its neighbour every way. Pay attention to watering, to encourage growth, and

keep all weeds down. Plants established thus early will bid defiance to worms and frosts. At the beginning of March, place round each plant a tump of the richest stable dung; not a mere sprinkling, but a tump, or hillock, drawn and pressed firm and close round each plant; so that, when finished, it shall be *at the least* six inches high, and form a circle two feet in diameter, leaving the crown visible in the middle. The bed will then present a series of circles touching one another, with the ground appearing in the interstices. The spring rains will wash the goodness of the dung to the roots of the plants; the tumps will gradually settle down, and, when the berries are getting ripe, will be converted into a clean substratum, from which no dirt will splash upon them. No watering whatever is required, as this system of management bids defiance to the weather. The following spring these hillocks of manure will have crumbled into dust, and the above operation must be repeated.

Now for the results. If due attention has been paid to every particular, *each plant*, with the exception of those of *British Queen*, will produce a dish of fruit during the season. *Hooper's Seedling* produces with me, the first season, berries that *average* twenty to the pound; and twelve of the largest in a dish will measure seven inches round each.

All Strawberries produce the heaviest crop the second year, but with smaller berries. If they have borne well, I never leave any, except *British Queen*, more than two seasons. That, however, may be left three, or sometimes even four, with advantage. *Hooper's Seedling* and *Black Prince* ought, certainly, not to remain more than two seasons.

No one who gives this system a fair trial will have reason to regret it. I have followed it myself, for the last six years, with complete success. It cannot be said to be a waste of manure, for the Strawberry will repay all you give it. A large saving of ground is effected, since fewer plants will be required than under any other system; and, when the beds are broken-up, the ground is in first-rate condition for other crops.

The only difficulty your readers will experience, is the getting their gardeners to follow these directions implicitly. I have had friends constantly express admiration at the size and abundance of my fruit, and eagerly inquire how it is I manage to produce it in such perfection. I take them to my Strawberry-beds, and explain the whole process, carefully pointing out and insisting upon the main point in the system, viz., the large tumps of good rich manure round each plant. They see the results and the simplicity of the whole matter, and resolve to imitate my example; but they reckon without their host. Their gardeners won't do it. The next season they complain they have not succeeded in growing such Strawberries as mine; I go to the garden, and see a sprinkling of manure over the ground, between the plants. This will not do, and I can assure anyone who wishes to follow out this plan, that he must stand by in the spring and see a good hillock of manure, pressed solid with the hands, and standing from six to seven inches high round one plant, as a model, and then give strict directions that all the other plants are to be treated in exactly the same manner. The essence of the plan consists in *good plants*, and *abundance of rich manure*.

The system is equally applicable to the Raspberry.—H. C. K., S——— Rectory, Hereford.

HOW TO KEEP RATS OUT OF YOUR DWELLINGS.—Let the bricklayer secure all the holes, and put the drains in complete repair, and after that well line them with a thick layer of cement. But, if they are very much dilapidated, it will be much cheaper and much safer to have them done with pottery drain-pipe, with a trap at the end—for pottery-pipe is entirely proof against the teeth and claws of rats; while, on the other hand, they will gnaw through both lead and zinc. But should you have them repaired with brick, let him run iron gratings, in grooves, at the ends; then, if at any time there should be a stoppage, it will only be necessary to draw up the gratings, and the obstruction is removed; but be sure to let them down directly after. By this means the rats will be kept most effectually out of your premises, and all the annoyances and expenses they otherwise incur be entirely obviated.—*Rats; their History, with numerous Anecdotes, "by Uncle James."*

EARLY SWARMS.

I HAD two swarms of bees on the 15th of May, two on the 20th, one on the 24th, and one on the 31st,—four swarms out of five most excellent. The two on the 15th have filled the hives, and are working in the glasses. I do not consider I live in a good district for bees; but I fed my stocks all through last October on sugar and honey. I sign my name for your satisfaction.—C. Y., *Eton, Windsor*.

WE have had seven swarms up to this date (June 5), viz., one 20th of May, one 25th, one 29th, one 31st, one 1st June, and two 5th. Now, if the old adage be true, that

“A swarm of bees in May
Is worth a load of hay,”

surely we shall be all right with our bees this season; and, certainly, I never saw such large swarms, nor yet finer bees.—JNO. PERKINS, *The Gardens, Thornham Hall, Suffolk*.

I HAVE just bought of a cottager, near here (Ewell, Surrey), a hive of bees, which swarmed the 21st of May (it was a bright and beautiful day), and they appear strong and active. He is an old bee-keeper, and sticks to the old hive, and the smothering process. I am a novice in bee-keeping, and recoil from the contemplation of this barbarous practice. “Better kill them at once than starve them, which you do if you take away their food,” he says. And if that is unanswerable, I confess I should think so too. My bees have a good *billet*, and all their own way. I should be obliged by any advice how to systematise them. Improve their education, if you please, but not in “fancy hives,” which, like much that I observe elsewhere, makes them above their business. Where can “Payne’s improved cottage hive” be seen? and “Tegetmeier’s cheap wooden box?” I want something that honest bees may live in, and pay their way, without being either smothered or starved when I call for *the rent*.—REDOLENTQUE THYMO.

[Can any of our Suffolk correspondents say where Payne’s hives can be obtained? They were made near Bury St. Edmunds. Tegetmeier’s hives may be seen at his residence, Muswell Hill, near London.—ED.]

ENTOMOLOGICAL SOCIETY’S MEETING.

THE May meeting of the ENTOMOLOGICAL SOCIETY was held under the Presidentship of Dr. J. E. Gray, F.R.S., &c., and was very fully attended. Amongst the donations received since the last meeting were—The publications of the Royal Society of London, of the Royal Academy of Bavaria, and of the Imperial Society of Moscow; the fine work on the Butterflies and Sphinges of India, and their transformations, recently published by Dr. Horsfield, under the authority of the East India Company, &c.

Mr. Ianson exhibited a specimen of the bark of the Beech tree, infested to a very great extent by a species of *Coccus*, which emits a white exudation, something like that of the American blight.

Mr. Evans exhibited the larva and perfect state of a species of Weevil, of the genus *Pryporus*, which had been found infesting bulbs from the Cape of Good Hope.

Mr. Francis exhibited various Coleoptera, recently captured in the neighbourhood of Folkestone. A number of rare species, belonging to the same order, and mostly new to this country, but generally of small size, were also exhibited by Messrs. Ianson and Waterhouse, and Dr. Power.

The President communicated to the Society the result of the sale of the Society’s collection of exotic insects, which had taken place since the last meeting, and announced that the Council intended to apply the proceeds of the sale (which exceeded £300) to the purchase of British insects (to increase the native collection forming by the Society), and in additions to the library. It had been intended that all the typical specimens of species described by Mr. Kirby should be retained; but, as some of these were unfortunately without labels, it had been impossible to identify them; it is, therefore, to be hoped, that, should any such be discovered in the

lots sold by auction, the purchasers will restore them to the Society.

Mr. Samuel Stevens exhibited a number of splendid Butterflies, recently collected in Amboyna by Mr. Wallace, and which had been sent home, each being folded carefully in a small piece of paper.

Mr. Wailes exhibited a new British species of Microlepidoptera, closely allied to *Cemiosoma Laburnella*, which he had reared from *Genista tinctoria*. A conversation hereupon ensued, on the claim of this, and various other closely allied presumed new species of moths, to be considered as really distinct, and on the extent to which these species might vary, owing to a different, although nearly allied, kind of plant having been eaten by the caterpillar.

Dr. Gray complimented the Society on the appearance of the first part of the catalogue of British Coleoptera, recently published by Mr. Waterhouse, which would doubtless give a fresh impulse to the investigation of the insects of that order.

Mr. F. Smith, of the British Museum, exhibited a specimen of the rare and remarkable Parasite *Stylops melittæ*, which he had reared the same morning from the wild bee *Andrena fuscata*. Also the nest of a leaf-cutter Bee, which had been built within a piece of India-rubber tubing, the cells being placed transversely.

Captain Cox exhibited specimens of hop-poles, from Kent, greatly injured by the burrows of the larvæ of one of the Longicorn beetles (*Cerambycidae*—possibly *Clytus arietis*, or *Pachyta collaris*).

Mr. S. Stevens read some extracts from a letter, received from Mr. Bates, giving an account of the habits of the Brazilian Butterflies, belonging to the genera *Pandora* and *Ageronia*, which differ from those of all the other genera of Nymphalideous butterflies. A letter was also read from Mr. Wallace, commenting on the nomenclature of the large Butterflies forming the genus Ornithoptera, which led to a smart discussion on the rules of zoological nomenclature, in which the President, and Messrs. Westwood, Waterhouse, and Lubbock took part.

Dr. Hagen read descriptions of six new species of British Neuropterous insects, belonging to the genera Chloroptera, Isopteryx, Leuctra, and Nemoura.

A note was read by Mr. Newman, on the habits of *Scolytus destructor*, in opposition to the memoir of Captain Cox on that subject, for which the gold medal had been awarded him by the Royal Botanical Society.

A FEW NOTES ON WATERING.

RAIN can so confidently be expected at all times, in some situations, that out-door watering is very little required; in fact, an opposite evil is often run into, for fine dry weather is the exception, and frequent showers the rule. Be this as it may, and be the evils and inconveniences of hand-watering ever so many, it must, nevertheless, be done to a certain extent.

Seed beds of Lettuce, Endive, Cabbage, and other things which must be sown at particular times, and these very often in dry and bright unclouded sunshine, must have a little moisture supplied, to enable the seeds to germinate; otherwise they either perish in the ground, are devoured by birds, or lie dormant until quickened by rain, which may, very often, not come until it is too late for the plants to occupy the place they were intended for. But watering, even then, has its evils, which it is proper here to look into.

In the first place it may be averred safely, that no watering whatever, however skilfully done, can compare with that beneficial mode which nature adopts in moistening the earth, and washing the foliage of plants with copious showers of rain. The latter evidently carries some gaseous, or acid, impregnation with it, which even rain water does not possess, when poured out of the rose of a watering-pot. The condition of the atmosphere at this time has doubtless much to do with this: at all events, no hand watering is like rain. In many cases, it is impossible to obtain even rain water, for the purpose of out-door watering. The inmates of a glasshouse generally claim attention first; and, when the tanks are getting low, out-door watering from them is forbidden, and recourse must be had to the pump, or other source of supply. Very often this

is cold, hard, and unpalatable to plants, and in some cases at variance with the character of the soil altogether. A water strongly impregnated with iron is ill-fitted to pour over plants, whose natural habitation is a chalky soil, such as the Cabbage tribe; while a bed of new planted-out Rhododendrons are obliged to drink a water better calculated to promote disease than health. Such extreme cases must be modified as far as possible; and when water of an opposite character to the wants of the plant must be administered, let it be given in as small a quantity as possible; and, when practicable, let something be added to it, to give it more affinity to the plants it is intended to refresh, supposing, as an example, that a dry, hot summer renders watering necessary for all newly-sown or planted-out crops.

Watering alone will not be sufficient to maintain health; and in the case of newly-sown beds, deluges of cold hard water tends to harden the surface, and make it difficult for small seeds vegetating; in this case, it is best to moisten the bed well at the time of sowing, and finish it off, by throwing over it a little dry material, of as open a kind as possible. Very fine leafy mould is the best article that I have ever applied, as it does not easily cake and harden, like many sandy mixtures; but the principal remedy is, to shade the bed as soon as the seed is sown, and watered as above. A total shading is improper; a partial one, which just enables so much of the sun's rays to reach the ground, as to suck the moisture from below to near the surface, is better. The most simple way is to cover the bed tolerably thickly over with boughs of some kind, that have no leaves on. The sun's playing amongst them checks its intensity, yet admits a portion of its fertilizing qualities to reach the surface. In rural districts, Pea-stakes will do this, but they are not so plentiful in suburban gardens; yet something or other must be used. Netting is too close to the ground, besides which it is expensive, and close contact with the naked earth quickly rots it; but, to those who do not heed either expense or trouble, some slight canvass, or netting screen work, might be made, and laid down where wanted,—of course, elevated a little from the ground. But this is, after all, no better than boughs, because the side-draughts are very drying under a raised frame. Nevertheless, something must be done in very dry weather to keep the plants from suffering for a time, or to enable the seeds to germinate.

Watering newly-planted fruit trees, or shrubs, must also be done with caution, and, when once done, had better not be repeated too often; rather shade the ground with some loose material, which checks evaporation; and keep the roots of everything else at arm's length. For, be it remembered, that no amount of watering will compensate a fruit tree for the robbery it has sustained by other crops exhausting the soil its roots have to procure their food from. Peas, and other crops, are very often the cause of Peach trees appearing as if they wanted water, and the pump is but a poor remedy for this state of things. In fact, let it always be borne in mind, that watering by hand is an artificial operation, and is only wanted when the suffering plant is placed in an artificial condition; and, even then, let it be treated as nearly as possible as nature would treat it. Do not give deluges of cold water, daily, to plants not requiring it; better, certainly, it would be to let it alone entirely.—J. ROBSON.

QUERIES AND ANSWERS.

PRUNING HYDRANGEAS.

"I found myself in a great dilemma, by the conflicting advice of several books and a horticultural adviser. One book says:—'Cut off the branches when it has done flowering.' Another, 'cut all branches close.' Now, I did so in 1856; but in 1857, in twelve large plants, and ten smaller ones, I had no flower at all, although the plants are in the open ground, in a half-sunny position, having the sun from two o'clock till seven now, in a north-west aspect; beautiful and exuberant foliage; copious waterings and stirring of the ground; rich sandy mould, brought on purpose; deep digging, and every care taken of them. I consulted a florist, to know the cause of my failure. He told me:—'You have cut just the branches

which were to bear flowers,—the old wood made the year before; the flowers do not grow on the new shoots of the year.'

"As this is so completely at variance with the books, and I do not know which to believe, I should be exceedingly obliged by your telling me what I am to do. The plants have a fine appearance and have not yet shown flowers; but I kept the old wood, last autumn, for a change of system, and I do not know yet what may be the result. As there is a large quantity of new shoots from the ground, which may be an obstacle to the blooming, I am particularly anxious to know whether I am to cut them off now, to thin the plants, or let them grow for the flowers of next year, if the old wood does not produce flowers every year, and wants to be renewed, as for Raspberry bushes?"—J. L. DE LOLME.

[The *Hydrangea* is cultivated and pruned in two different ways, for pot culture, and the pruning for out-door plants, like yours, is a third mode. The Grape Vine is also pruned three or four ways for different styles of culture; and to prune the Vine, or the *Hydrangea*, or any other plant, in a different way from that which it needs, under a particular system of culture, is sure to end in failure. The safest way to prune the *Hydrangea*, for out-door culture, is never to cut back one morsel of the young wood till it has done flowering, and then to cut it back entirely to the old wood; never to cut back the old wood until it gets too crowded, and then to cut back to a promising young shoot; to thin out the young shoots when they are three joints long, if they come much crowded, and not to allow suckers to grow from the roots on any account whatever. There is nothing differing in principle between pruning a Gooseberry bush and a *Hydrangea* bush: the old thumb rule, and the best rule for Gooseberry pruning, is—"What you cut, cut clean out, and what you leave do not touch with the knife." But the drooping kinds of Gooseberries require some of the points of the young shoots to be cut back—so much the worse for them.]

DESTROYING ANTS.

"My conservatory and garden are overrun with small ants. The buds of the standard Roses, as they burst, are eaten away by them, and the ground rendered hollow by their undermining. Can you, or any of your readers, suggest any effectual mode of destroying such mischievous enemies?"—J. D. G.

[The ants do no harm to plants in a direct way, but, indirectly, they are all scamps; for as fast as the fly sucks the bark the ant sucks his body, and, between the two, what plant can bear it? Kill the fly with tobacco-water, or smoke, and the ants depart at once; but only to begin the game elsewhere, to satisfy their luxurious gluttony, until the fruit gets ripe. Then the fly is deserted, and no fruit is exempt from the ant; and the least crack, or wasp bite, is sufficient to allow the ants to get at and consume the largest fruit—they are excellent judges of the flavour.]

TO CORRESPONDENTS.

SKELETON LEAVES (*Veronica*).—If you will communicate your address, we may put you in the way of disposing of them. They are very beautiful.

FORTUNE'S YELLOW ROSE (*An Old Subscriber*).—The white Rose you inclosed is certainly not it. Fortune's Yellow Rose is decidedly yellow. No soil we know of would change a yellow Rose into a white one.

GUANO LIQUID MANURE (*Jane*).—Pour off the clear liquid, and use that for watering. Do not wet the leaves of either Geraniums or Petunias with it. It might spot them. Apply it once a week. Thoroughly decayed turf (the top spit), from a light pasture, is the best of all soils for Pelargoniums. It is the careful culture—the due promotion of growth and ripening of the wood—which enables professional florists to bloom Pelargoniums so far excelling those bloomed by amateurs. Do not apply the liquid manure after the flowering is over; but, by free exposure to light and air, enable the plants to ripen their shoots.

SEEDLING UNIQUE GERANIUM (*H. Wright*).—Your seedling, from *Unique*, is of the same colour and substance as those of the *Lilac unique*, and with smaller flowers; therefore, it is not quite so good as *Lilac unique*, and the latter is the worst seedling of *Unique* which has been on sale. If your plant is of a better habit than *Lilac unique*, that will tell in its favour; if not better in habit, it is of no money value whatever.

NAMES OF PLANTS (*Vale of Belvoir*).—1. The common *Cytisus*, *Cytisus sessilifolius*. 2. *Coronilla Emerus*, commonly called the Scorpion senna. (*R. D*—, *Burnham Overy*).—Your bulbous plant is *Arthropodium cirrhatum*, or New Zealand *Arthropodium*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. *Sec.*, Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. *Sec.*, Mr. James Beesley. Entries close June 26.

JULY 15th. YORK. *Sec.*, Mr. R. Smith, cutler, 10, High Ousegate, York.

AUGUST 7th, 9th, 10th, and 11th. *CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. *Sec.*, W. Houghton.

AUGUST 18th. AIREDALE. *Hon. Secs.*, J. Wilkinson and T. Booth, Shipley.

AUGUST 28th. HALIFAX AND CALDER VALE. *Sec.*, Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.

OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

THINNING OUT.

EVERYTHING with us tells of poultry, and we cannot help viewing things as they bear on our subject.

Take, for instance, a scene at the workhouse, on the board-day.

The comfortable room, and the numerous faces around the table. The aristocratic members sitting with the ease that belongs to their class. The retired tradesmen trying to look like them; and the men still in business weighing their words, when any of their customers are present, lest they should be drawn into opposition. The Vestry Clerk, to whom all appeal, and the formidable Janitor who introduces those who have business.

An old lady of the "Sairey Gamp" class is ushered in.

"An old face," says one to another.

"Well, Mrs. Blunt?" asks the clerk.

"If you please, Sir, my husband is dead, Sir."

"Then he is done with," says the clerk, scratching through his name with the pen.

"I beg your pardon, Sir," says Mrs. Blunt, "did I hear you aright? Will you have the goodness to say that again? Done with; yes, Sir. A good thing for him, Sir. He was a sufferer; and nobody knows what I have undergone."

"That will do. Call another."

"Asking your pardon, that will not do, Sir. And me; what is to become of me?"

"Come into the house."

"Me, come into the house! and break up my home! And my children, gentlemen, if you please,—good children, every one of them,—what are they to do?"

"They are old enough to earn their living."

"And they tries, gentlemen. But they ain't strong; and they gives me all they earns,—save a shilling the girls keep for a riband, and the boys for a bit of tobacco. T'aint much as I asks, Gentlemen; just the four shillings a week I had in my husband's time."

"Gentlemen," says the Vestry Clerk, "they will not work; and, so long as you allow them relief, they will depend on that, instead of themselves, and live in a state of misery."

Still the widow struggles on; till at last it is admitted by her, that all her children depend on *her* earnings, and that, while she and the youngest might live well upon them, the whole only starve.

How many poultry yards are like this!

"Thomas, kill that sickly cock."

"What, Sir! that niec-coloured bird?"

"Yes! he is always ill."

"I think he is much better."

"But he is not worth his food."

"It is very little he eats, Sir; and if you knew the pains I

have taken to rear him— Why, only yesterday I spent above an hour attending to him."

"Kill him at once; your time will be far more profitably employed in attending to those that will make a return for it."

"Mary, put up all those chickens to fatten, except the eighteen we selected yesterday."

"La! Ma'am, you can't mean it, I am sure; it will pay better to keep them."

"Not at all! they ruin me in food, and you know they are all faulty, and will never do for exhibition."

"Oh! Ma'am, they are good fowls, all of them, and they grow nicely. Some of them may be a leetle crooked, and some four-elawed, but I can't bear to sweep them off in this way; let us try them a little longer."

"I will do nothing of the sort. All faulty birds should be cleared off now, while they are good, and valuable as food; and they should not be kept till they are too old to eat, while it is well known they can never be exhibition birds."

The selected birds will have a better range, and more attention, while the quantity of food, and the time which, allotted to a yard-full, is little more than neglect, will, if bestowed on a smaller number, bring them to perfection.

BATH AND WEST OF ENGLAND SOCIETY'S EXHIBITION OF DOMESTIC POULTRY AT CARDIFF.

THE Bath and West of England Society is now one of the oldest in the United Kingdom, and, from the untiring energy of the Council, never flags in the public estimation. The poultry department, complete in all respects, owes its high position to the energy of Samuel Pitman, Esq., of Rumwell Lodge, Taunton, whose attention to the poultry, and universal courtesy to visitors, are alike worthy of every praise. The situation chosen for the Meeting was exceedingly beautiful and rural, the timber, with which the Show-ground was studded, having attained perfect maturity; whilst the spring-tide of the year added all the beauties for which this season is proverbial, and which are so highly valued by casual visitors, whose general occupations in pent-up towns render the treat of "an out" fifty-fold more appreciable. Under this happy combination of circumstances, the company assembled was not only numerically strong, but likewise embraced almost every family of distinction for many miles around Cardiff. The good folks of the town, too, were nothing loath in their contributions to the general holiday: triumphal arches, of the most elaborate and expensive character, were to be met with repeatedly in most of the principal streets, whilst banners of all kinds floated by the hundreds in every direction.

To complete the enthusiasm of Cardiff, an illumination took place on the evenings of the Show days, and many of the devices, in gas, were both appropriate and popular. A very good band also added its attractions.

In reference to the poultry, which necessarily occupies our special mention, the number of pens competing fell somewhat short of those of former years: but, for the excellence of the stock shown, the collection quite held position as a whole with those of former occasions; indeed, in many classes, outvied materially any Poultry Show we ever yet attended. This is easily accounted for, from the fact, that whilst almost all our principal breeders competed, a select few "new comers" swept away no trifling proportion of the Society's premiums.

The silver cups were unusually handsome and good, each bearing an engraved particular, declaratory of the success of its future owner, besides being handsomely embossed. The condition of many first-rate pens of poultry was indifferent, indeed some few had absolutely commenced moulting heavily, and thus lost distinctions otherwise their due, still the general feature of the poultry was excellence and perfection of plumage.

The *Grey Dorkings* were particularly good, and the successful owners may well congratulate themselves on their superiority. The *Game* classes were also very good. The *Malay* class was a marvellous one; for, generally neglected as they have been for some time, they here held their own with any class in the Show. Some few exceedingly good pens of *Hamburgh* fowls were present, but the remainder were not par-

ticularly praiseworthy. The best *Black Cochins* we remember to have seen were here triumphant in a large class, although, by some amateurs, a perfectly black cock of this variety has long been regarded as a myth; here, however, the colour was true and unexceptionable. There were some especially good Grouse birds likewise. Never was there a better show of *Sebright Bantams*; and in Black, and also White ones, there was no cause for complaint. A pen of *Rumpless* Pile-coloured Bantams, was a singularly attractive feature to visitors, being quite a novelty.

The *Geese* and *Turkeys* were both first-rate; the *Aylesbury Ducks* equally good, but the *Rouen Ducks* inferior. Among the excellent extra stock, were perfect specimens of white and also coloured *Peafowls*, white *Guinea Fowls*, and very superior *Spanish Geese*.

The collection of *Pigeons* was unexceptionable, the competition of the highest character, and many new varieties were exhibited in superior feather: a pen of the so-called "*Meeves*," attracted considerable attention, whilst *Swallows*, *Brunswicks*, *Magpies* (red and black ones) were well shown.

All the poultry were exhibited in the now well-known pens of Mr. Cooke, of Colchester, and the tents containing them were very superior.

The Judges, were Mr. Edward Hewitt, of Sparkbrook, Birmingham, and Mr. Tegetmeier, of Muswell Hill, London.

BEVERLEY AND EAST-RIDING OF YORKSHIRE POULTRY SHOW.

THE first annual Exhibition of this Association was held at Beverley, on Wednesday and Thursday, the 9th and 10th instant.

JUDGE—E. Hewitt, Esq., Eden Cottage, Spark Brook, Birmingham.

The following prizes were awarded:—

SPANISH.—First, S. H. Hyde, Ashton-under-Lyne. Second, T. T. Peirson, M.D., Bridlington Quay. Highly Commended, T. T. Peirson, M.D., Bridlington Quay; C. R. Titterton, Birmingham. Commended, W. Silvestor, Sheffield; W. Dawson, Hopton Mirfield.

DORKINGS.—First, P. Barnard, Bibby, Brigg, Lincolnshire. Second, Rev. G. Hustler, Appleton. Highly Commended, P. Barnard, Bibby, Brigg, Lincolnshire; E. Barrow, North Cave; C. R. Titterton, Birmingham. Commended, H. W. B. Beswick, Helmsley, Yorkshire. (A very good class.)

COCHIN-CHINA (Buff, Lemon, and Cinnamon).—First, T. H. Barker, Hovingham. Second, J. Teale, Sigston, Welburn. Highly Commended, T. Sellers, Hunmanby; G. W. Boothby, Louth. Commended, W. Silvestor, Sheffield; G. S. Simpson, Hunmanby.

COCHIN-CHINA (Any other colour).—First, W. Dawson, Hopton Mirfield (White). Second, D. B. Turner, Hull (Partridge).

GAME (Black-breasted and other Reds).—First, A. Sutherland, Burnley, Lancashire. Second, H. Adams, Beverley. Highly Commended, J. Peck, Hunmanby; J. Layenp, Brook Cottage, Driffild; J. Monsey, Norwich; W. Dawson, Selly Oak. Commended, H. Adams, Beverley; J. Burley, Poppleton, York; W. Tree, Driffild. (The class very good.)

GAME (Duckwing and other Greys and Blues).—First, T. C. Trotter, Sutton. Second, H. Adams, Beverley. Highly Commended, H. Adams, Beverley.

GAME (Any other variety).—First, H. Child, jun., near Birmingham. Second, H. Adams, Beverley.

HAMBURGH (Golden-pencilled).—First, C. R. Titterton, Birmingham. Second, A. G. Waithman, Halifax. Highly Commended, Mrs. H. Sharp, Bradford. Commended, E. Calvert, York; J. Dixon, North Park, Bradford.

HAMBURGH (Silver-pencilled or Chitteprat).—First, J. Dixon, North Park, Bradford. Second, Mrs. H. Sharp, Bradford.

HAMBURGH (Golden-spangled).—First, H. Adams, Beverley. Second, W. R. Law, Bourn-brook Farm, Birmingham. Highly Commended, J. Dixon, Bradford. Commended, Rev. J. C. Raw, Ainderby Vicarage.

HAMBURGH (Silver-spangled).—First, C. R. Titterton, Birmingham. Second, J. Dixon, North Park, Bradford. Highly Commended, Mrs. H. Sharp, Bradford; A. G. Waithman, Halifax. Commended, Miss Reynard, Beverley.

POLISH (Black, with White Crests).—First and Second, J. Dixon, Bradford. Commended, G. Winter, New Village, Hull.

POLISH (Any other variety).—First, J. Dixon, Bradford (Golden). Second, C. R. Titterton, Birmingham. Commended, W. Silvestor, Sheffield (Silver-spangled); G. W. Boothby, Louth (Silver); J. Dixon, Bradford (Silver).

ANY OTHER PURE OR DISTINCT BREED (Not previously classed).—

First, W. Dawson, Hopton Mirfield (Sultans). Second, S. Holloway, Hull (Silky Fowl). Highly Commended, D. Layborne, Beverley (Friezland); R. Dring, Hull (Brahmas); H. Sharp, Bradford (Black Hamburgh). Commended, J. Teasdale, Welburn, Castle Howard (Brahmas). (A very good class.)

ANY FARMYARD CROSS.—First, Mrs. T. Binnington, Walkington. Second, J. Donkin, Tickton. Commended, G. Robinson, North Frodingham.

BANTAMS (Black and White).—First, C. R. Titterton, Birmingham. Second, H. Child, jun., Birmingham. Commended, R. Ridsdale, Walkington; J. Monsey, Norwich; A. G. Waithman, Halifax. (The class very superior.)

BANTAMS (Gold or Silver-laced).—First, Lady Londesborough, Grimston. Second, G. Baillie, jun., Mellerstain, Kelso. Highly Commended, C. R. Titterton, Birmingham. Commended, J. Dixon, Bradford.

BANTAMS (Any other variety).—First, S. Clough, Low Mills, Boston Spa. Second, J. Monsey, Norwich (Game). Highly Commended, I. Thornton, Heckmondwike (Black-breasted Red Game); S. Clough, Low Mills, Boston Spa. Commended, W. Taylor, Hempholme.

SINGLE COCKS.

SPANISH COCK.—Prize, T. T. Peirson, M.D., Bridlington Quay. Highly Commended, T. T. Peirson, M.D., Bridlington Quay. Commended, W. Dawson, Hopton Mirfield.

DORKING COCK.—Prize, U. Child, jun., Birmingham. Highly Commended, P. Barnard, Bibby, Brigg, Lincolnshire. Commended, J. M. Jennings, Driffild.

COCHIN-CHINA COCK (Any colour).—Prize, W. Dawson, Hopton Mirfield. Commended, Miss A. E. Sugdon, Leeknfield; Miss H. Preston, Bulmer Rectory, near Castle Howard.

GAME COCK (Any colour).—Prize, W. Dawson, Selly Oak, Birmingham. Highly Commended, W. Bennison, Beverley. Commended, Mrs. E. Rippon, Beverley (Black-breasted Red); O. A. Young, Driffild; J. Layenp, Brook Cottage, Driffild (Black-breasted Red); G. Julian, Beverley; H. Firth, Beverley; R. Field, Hull.

HAMBURGH COCK (Golden-pencilled).—Prize, J. Charter, Driffild. Commended, G. Stokehill, Malton.

HAMBURGH COCK (Silver-pencilled).—Prize, J. Dixon, Bradford.

HAMBURGH COCK (Golden-spangled).—Prize, Rev. J. C. Raw, Ainderby Vicarage. Commended, J. Charter, Driffild.

HAMBURGH COCK (Silver-spangled).—Prize, J. Dixon, Bradford.

POLISH COCK (Black, with White Crest).—Prize, W. I. Ronksley, Walkley, Sheffield.

POLISH COCK (Any other variety).—Prize, J. Dixon, Bradford. Commended, G. Winter, New Village, Hull.

COCK OF ANY OTHER VARIETY (not previously classed).—Prize, J. Charter, Driffild. Commended, Miss Reynard, Beverley.

COCK OF ANY FARMYARD CROSS.—Prize, J. Jewison, Lund. Highly Commended, J. Parker, Beverley.

BANTAM COCK (Black or White).—Prize, Miss M. K. Turner, Beverley. Highly Commended, S. A. Simpson, Tickton; Mrs. Wylie, Beverley. Commended, C. R. Titterton, Birmingham.

BANTAM COCK (Golden or Silver-laced).—Prize, G. Baillie, jun., Mellerstain, Kelso. Commended, J. Dixon, Bradford.

BANTAM COCK (Any other variety).—Prize, C. R. Titterton, Birmingham. Commended, J. Monsey, Norwich (Duckwing Game).

SWEEPSTAKES.—**GAME COCK** (Any variety).—First, J. Taylor, jun. Burton Agnes (Duckwing). Second, A. Mennell, Westwood, Beverley (Black-breasted Red). Third, H. Adams, Beverley. Fourth, R. A. Hodgson, Beverley. Highly Commended, J. Mitchell, Welburn, Castle Howard (Black-breasted Red); H. Adams, Beverley; R. Clubley, Beverley. Commended, H. Turner, Beverley; M. Jordan, Caythorpe. (The competition in this class good.)

SILVER PLATE.—**DORKING COCK.**—Prize, G. W. Moss, the Beach, Aigburth, near Liverpool. Highly Commended, P. Barnard, Bibby, Brigg, Lincolnshire; H. W. B. Berwick, Helmsley, Yorkshire; G. Baillie, jun., Mellerstain, Kelso. Commended, Rev. G. Hustler, Appleton. (A very first-rate class.)

GEESE.—First, J. Price, Londonderry. Second, J. Dixon, Bradford (Toulouse). (The class good.)

TURKEYS.—First and Second, J. Price, Londonderry (Norfolk) (American).

GUINEA FOWL.—First, H. Hodge, 6, High Street. Second, T. Hart, South Frodingham.

DUCKS (Rouen or Rhone).—First, J. Price, Londonderry. Second, T. H. Barker, Hovingham. (An indifferent class.)

DUCKS (Aylesbury).—First, J. Dixon, Bradford. Second, J. Price, Londonderry.

DUCKS (Any other variety or cross).—First and Second, J. Dixon, Bradford (Grey) (Black East Indian). Highly Commended, Mrs. Thompson, Weel Carr (Muscovy); T. Dawson, Driffild (Decoy Ducks).

SPECIAL PRIZES.—**MALAY.**—First, W. Rogers, Woodbridge, Suffolk. Second, C. Ballance, Taunton, Somerset.

SPECIAL CLASS.—**SINGLE COCK.**—First, C. Ballance, Taunton, Somerset. Second, J. Dixon, Bradford.

EXTRA STOCK.—Prize, W. Leeson, Driffeld (Black-breasted Red Game).

We will give the awards for Pigeons, Rabbits, and Canaries, with other particulars, next week.

PIGEONS.

(Continued from page 154.)

In towns, among fanciers, and where fancy Pigeons are kept, a better description of fitting is resorted to. For flying Pigeons, a double roof is preferred, in which a platform of boards is laid. On to this opens the loft, on which is placed the trap, or area; a square frame of lattice, or wire-work, the back covering the entrance, and the front and two sides opening on the platform by falling doors, which all draw up at once by a cord, to inclose or confine the Pigeons. At each side of these doors, at the corners of the trap, are what are called the bolting-wires. These are stout double wires, inserted in a piece of wood at the top, and hung on pivots at the sides, so that the wires swing loosely, and allow any Pigeon that may be shut out to walk in, by pressing against them; but, falling against a small ledge at the bottom, they will not allow the birds to escape. On the top of this trap, spaces, about four inches square, are also left, called tipping holes, by which the Pigeons can also enter, but cannot escape, because, if they attempted to fly up, their expanded wings would prevent them. These areas, or traps, are very useful, and should be attached to all lofts where fancy or flying Pigeons are kept; as any fresh Pigeons can be allowed to go out in them to see the neighbourhood, and learn the way in and out without danger of their escaping; while any of the other Pigeons that may be shut out can get in when they please. It also gives the fancier a great command over his birds at any time.

Many of the high-class fanciers do not allow their birds their liberty at all. Some only permit them to go out in an aviary, or latticed inclosure, provided with a bath and other requisites; while others always keep them in the loft, or appropriate them a spare room, or attic. These are often fitted up with pens suitable for keeping the pairs separate, or allowing them to fly in the room at pleasure. These are of various forms and devices, according to the means or inclination of the owner.

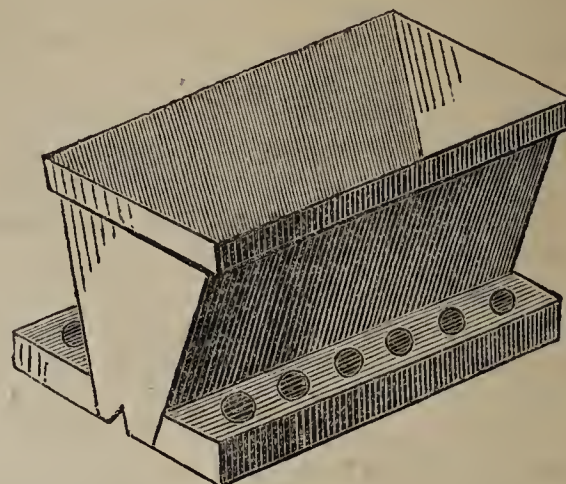
Pigeon-houses, or lockers, on a more limited scale, are of various forms. The most convenient is that of a long parallelogram of boards, well planed and painted, and placed against a south or southerly wall. The whole is divided into nests of about ten or twelve inches square; a boarded front, with holes four inches wide by six high, leading into the nests, and having a ledge or alighting board along the front of each row of nests, six inches broad, with outside partitions dividing the nests in pairs. Very pretty circular pigeon-houses are also made, to be fixed on a pole, as ornaments for a lawn; but such things as old barrels and tea-chests are not to be recommended.

Wherever several varieties are kept, it will be requisite to have a pairing, or matching pen, which is better placed out of the pigeon-house, and away from the other Pigeons. This consists simply of a box, or frame-work, in which the birds it is desirable to couple can be placed; and it must be furnished with a sliding partition of light lattice, or wirework, through which the Pigeons can see each other.

A bag-net, on a shortpole, something like a landing-net, is also very useful for catching the Pigeons, if their loft or aviary is large.

The hopper, or meat-box, is also a requisite for containing the food, in which it is kept clean. The Pigeons can help

themselves whenever they feel inclined. If constantly thus fed, they do not eat so ravenously, nor consume so much food, as if only fed at stated times; neither are they so liable to be neglected. This is, however, the more necessary where Pigeons do not have their liberty.



The form of the hopper is that of a parallelogram box, the sides of which slope in towards the bottom, so as only to leave a small opening at the lower part, for the food to run through into the trough at the bottom, which is protected either by a boarded cover with holes, or, what I prefer, only a few wires, to prevent the birds knocking the food over with their beaks, which they are apt to do if it is left quite unguarded.—B. P. BRENT.

(To be continued.)

OUR LETTER BOX.

TEMPERATURE REQUIRED IN AN INCUBATOR (*Nemo*).—Cantello and Manesi, who were inventors of Incubators, agreed in directing that, for hatching hen's eggs, the temperature must be kept at about 104°; but not higher.

HENS DYING SUDDENLY.—“Can any of your correspondents furnish me with a reason for the mortality of my hens? Within a month, three have been found dead, having dropped off the perch, without any previous illness being observed. They were all last year's chickens. On being opened, a good deal of inflammation was evident in one of the hens, but the crop was nearly empty. In the other two no ailment was perceptible; but they were extremely fat *inside*. Amongst other scraps from the kitchen, I have lately often given the hens bits of the rind and fat of raw bacon, hoping to increase the number of Eggs; for they have all laid very badly throughout the winter. Is it at all probable that the *salt* food can have caused their death?”—OTTERWELL.

[The “extremely fat inside” reveals the origin of the mischief. A vessel ruptured on the brain in some; and that with “a good deal of inflammation” very likely had her egg-organs diseased. No greater mistake can be made, than feeding hens highly to increase the number of eggs laid by them. The bacon and other kitchen scraps, calculated to fatten the hens, and not the salt, produced the fatality. Do not give them any animal food, and reduce them to one feed of barley meal in the morning, and a feed of boiled rice at night, with plenty of green food during the day. Health and vigour, not fatness, is required in breeding stock. You do not state what kind of fowls you keep. *Cochin-Chinas* and *Hamburghs* are the only good layers in winter; and of these only the early-hatched pullets. No old hen of any breed is a good winter layer.]

DORKING CHICKENS AT CARDIFF (*An Exhibitor*).—We forwarded your letter to Mr. Hewitt, one of the Judges, and we agree with him in thinking, that to state *now* who the Judges considered had exhibited fowls of last year, pretending they were chickens of this year, would lead to an unprofitable altercation.

WEIGHT OF ADULT SINGLE-COMBED DORKINGS (*Idem*).—In reply to your query, he says:—“The best pen of Grey Dorkings I ever met with, and actually weighed, were a cock and two hens (single-combed), the property of Mr. Wm. Bromley, of Smithfield, Birmingham. The three weighed thirty-one pounds six ounces. Very rarely anything approximating to this weight is attained by prize birds. From twenty-five to twenty-eight pounds is the accustomed average. The rosy-combed are usually the most weighty, but coarsest birds.”

LONDON MARKETS.—JUNE 14TH.

POULTRY.

The continuance of the unusually hot weather renders anything like a quotation impossible, seeing that the prices are more influenced by the weather than the supply. Much of the poultry arrives in a state unfit for food.

	Each.		Each.
Large Fowls ...	6s. 6d. to 7s. 6d.	Pigeons	0s. 8d. to 0s. 9d.
Small ditto.....	4 6 „ 5 6	Guinea Fowls .	0 0 „ 0 0
Chickens.....	3 0 „ 4 0	Leverets.....	2 6 „ 4 6
Geese	4 6 „ 5 6	Rabbits	1 5 „ 1 6
Ducklings	3 6 „ 4 6	Wild ditto	0 9 „ 0 10

WEEKLY CALENDAR.

Day of Mth	Day of Week.	JUNE 23—28, 1858.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
22	TU	Banksia speciosa.	30.166—30.100	78—52	W.	—	45 af 3	19 af 8	44 af 0	11	1 34	173	
23	W	Banksia serrata.	30.213—30.163	83—50	E.	—	45 3	19 8	4 1	12	1 48	174	
24	TH	MIDS. DAY. NAT. JOHN BAP.	30.294—30.224	81—44	E.	—	45 3	19 8	31 1	13	2 0	175	
25	F	Bossia heterophylla.	30.346—30.341	84—43	E.	—	45 3	19 8	7 2	14	2 13	176	
26	S	Bossia inophylla.	30.331—30.192	85—46	S.E.	—	46 3	19 8	rises	☺	2 25	177	
27	SUN	4 SUNDAY AFTER TRINITY.	30.133—29.997	88—45	S.W.	—	46 3	19 8	46 9	16	2 38	178	
28	M	QUEEN VICTORIA COR. 1838.	29.892—29.700	92—58	S.W.	—	47 3	19 8	10 10	17	2 50	179	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-two years, the average highest and lowest temperatures of these days are 73.1° and 45.5°, respectively. The greatest heat, 93°, occurred on the 27th, in 1826; and the lowest cold, 35°, on the 23rd, in 1851. During the period 124 days were fine, and on 93 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

BROCCOLI.—Prick out young seedlings.

BRUSSELS SPROUTS.—Plant in showery weather, as ground becomes vacant.

CABBAGES.—Hoe between advancing crops; draw earth to the stems; and plant out plenty of the spring raised ones, for autumn and winter use.

CAPSICUM.—Plant out.

CARROTS.—Sow a little more seed, to produce a late crop, for drawing young. Loosen the earth between the main crops, where it is baked hard by the hot weather.

CAULIFLOWERS.—Plant some of the late sown as soon as the weather will permit; but, if they will not bear delay until a change of weather, they must be kept watered until they make fresh roots.

CELERY.—Water abundantly; it is naturally an aquatic. The first crops are apt to run to seed in a short time, if they are not kept moist; and the later ones are sometimes very much checked in their growth for want of it.

CUCUMBERS ON RIDGES.—Water, and then mulch with short grass, or litter.

ENDIVE.—Plant the strongest, in good ground, one foot apart.

SPINACH.—Sow, whatever the weather may be, as it soon runs to seed. Keep it watered during dry weather.

TOMATOES.—Keep them trained to the wall, or fence, and well supplied with water, or very little fruit may be expected this season.

TURNIPS.—Make a liberal sowing of the *Dutch*, or *Stone*, for autumn use.

WINTER CROPS.—Every available opportunity should now be taken to dig and prepare the ground, that advantage may be taken of the first showery weather, when it occurs, to plant out *Broccolis*, *Brussels Sprouts*, *Cauliflowers*, *Celery* in its various stages, *Cabbages*, *Green Kale*, *Savoys*, &c. The ground from which early *Beans*, *Peas*, *Winter Spinach*, &c., has been cleared will come in useful for the purpose, if deeply dug and well manured.

FRUIT GARDEN.

APPLE TREES.—Destroy American blight with any hard or half-worn painter's brush.

GRAFTS.—Advantage to be taken of showery weather, to remove the clay from grafts, where the growth of the scion requires the matting to be loosened.

PEACH and NECTARINE TREES.—The fruit to be finally thinned, and all laterals to be stopped above the second joint.

STRAWBERRIES.—Lay runners in small pots, for forcing.

WALL TREES.—Continue to prune away, or stop foreright shoots.

FLOWER GARDEN.

Grass lawns should not be mown too frequently, if the weather continues hot; but use the daisy rake during the heat of the day. Continue to peg down all plants that require it; support and regulate all climbers; remove all faded flowers; and let the whole appear neat and clean.

AURICULAS.—Look over the old plants occasionally, keep them clear from weeds, and carefully notice whether the drainage is free, as they are very apt to suffer from deficiencies in that respect.

CARNATIONS and PICOTEEs.—Thin the buds, remove all laterals as they appear, and attend to the destruction of green fly.

CHINA ASTERS, STOCKS, &c.—Plant out, in rainy weather, the remaining portion. Thin out and stake the shoots of the various herbaceous plants.

DAHLIAS.—Mulch, or cover the ground, about the roots with very rotten manure, and tie each stem to its stake as it grows. Trap earwigs.

PANSIES.—Put in cuttings; strip off and plant out side-shoots; gather seed as it ripens, collecting only from the very best flowers.

PHLOXES, ROCKETS, and other HERBACEOUS PLANTS, coming into bloom, to be watered, if the weather continues dry and hot.

PINKS.—Thin out the weakest, and tie up the strongest, buds. If the buds are sufficiently forward, tie some waxed thread round, to prevent them bursting, twisting the ends together, which will be a sufficient fastening. Put in pipings.

POLYANTHUSES.—As they are liable, at this season, to be attacked with mildew, they should be dusted with flowers of sulphur, to destroy it as soon as it appears.

RANUNCULUSES.—Shade from intense heat, to prolong the bloom. Flowers intended for cross-breeding ought not to be shaded.

ROSES.—Attend to the summer pruning of the autumnal sorts. As summer Roses are so abundant this season, a little sacrifice should be made to insure a fine bloom in the autumn; therefore, cut back to half the length half the number of shoots, and leave the remainder to bring forth their flowers shortly; when those that are cut back will soon shoot out, and produce a fine bloom in August and September.

TULIPS.—Take up the roots when the foliage has thoroughly faded; dry them in a shady, airy place. Do not remove the offsets attached to the parent bulb until all are dry.

WILLIAM KEANE.

CRYSTAL PALACE HORTICULTURAL SHOW.—JUNE 16TH.

THIS was a "Queen's day," and something more. But, with the awnings over the flowers, and the completeness of the ventilation system at the Crystal Palace, the heat was not so oppressive inside the

building as outside on the terraces. Yet, although the visitors were in their usual high spirits, there was not a dry eye in the crowd, and cambric was never more in requisition. The fallacy of the anti-crinoline movement was practically proved to the very letter on that day; that fashion is the best of all the fashions, and did not come in one day too soon for this tropical season!

The flower show was very much better than any of us practicals expected to find it, after six weeks of dog day's weather. The Roses suffered the most. The champions of the times, Mr. Dods, gardener to Sir John Cathcart, and Mr. Whitbread, gardener to Mr. Collyer, of Dartford, were pitched against one another, under the Handel organ, and where the fruit stood in May. The large circle in the centre of the Palace was done away with. The fruit table stood in advance of that part, and the rest of the arrangements were as last May. But the Palace itself was more relieved than in May. The Pomegranate trees, the Bay standards, and many of the large Orange trees, Rhododendrons, and Camellias in tubs, were removed to the south wing, and placed artistically, and with marked good taste, all along where the Poultry Shows are held, and on to the top platform, or upper end of the colonnade. There was a festooned-like line of hanging-baskets on each side of the great Handel organ, which had a singularly good effect, "cutting," as it were, the wings of the amphitheatre diagonally, without hurting any view or movement under them. The canvass, to keep in the stove heat, in the north or tropical end, being removed for the season, the whole length of the Palace was seen, or could be seen, at one view, or, rather in two views, one on each side of the central division, which separated the "flow" of the visitors, from the "return" movement. Along this central division, and at twenty yards apart, were placed graceful figures of statuary, on redlow pedestals, "to break the view," and throw it on both sides. The eating and drinking was upon an enormous scale; and the icing department, behind the scenes, put me in mind of the ease, simplicity, and comfort with which icing could be indulged in "at home," if the great body of the people but knew how to keep ice and use it. The flowers in the vases out on the terraces were all in full bloom, as formerly. The trees and shrubs were never in more perfect and fresh foliage. The grass was charming, but the walks are harsh to the toes and corns; and I suppose it is difficult to convince a whole generation at once, that walks, as smooth as this page, can be made, and kept, on such declivities as any man or woman, in their senses, can safely walk up or down. I cannot point out, just now, one single yard of a thorough good garden walk within fifty miles of London, in any public place.

The bedding-out is finished, and they do "come out" this season in proper and improved style. But I have only room to mention one large corner bed, on the south-side of the roscry, which is filled with *Geranium Ignescent major*,—the one which Mr. Wills spoke of lately in *THE COTTAGE GARDENER*, as being the best bedder of that race. He sent me his promised plants and others, and I agree with him, that *Verbena jaquinta* is the best purple we have: the habit seems equally good.

The grand feature of the day was the large fountains. When the bell announced "dressing time," the flowers, the ices, and the lemon and all other ades, were deserted, and the living masses moved in streams and waves down along the slopes: those who knew the way to the best points, took it to the opposite side of the great lakes, opposite the cascades and water-falls. It was to that point Her Majesty was conducted to get the best sight, when the fountains were first opened, and I

wished the Queen had been there, on this occasion, to see a totally different play of this "element." Some like the "awfully grand," and I am one of them; and some prefer the "majestically grand," and this was the first time that the weather allowed the latter mode in full perfection. After the huge pressure had washed out the rusty water, it rose in clear silvery spouts of all shapes and sizes, to the top of its bent and bearing; and then fell down as easily, and as gentle, and soft, and silvery, as if all the play was for escorting Juno herself, in one of her visits to this lower world,—not an extra ripple for any other goddess. Majestically grand is the proper name for that style of play. After that, over the hill to the beasts before the flood: here the roar of the rushing waters was deliciously refreshing for its close resemblance to natural scenes. In a few years, this will be the most delightful part of the ground. In hot sultry weather, shade and shelter from the sun, without the sight and sound of water, give no more idea of natural luxury than to see a lot of cows whisking their tails under the trees at the corner of a meadow. Our Chiswick seems destined for Alderneys and Short Horns, with its "connecting avenues of Lime trees," as the Doctor says, but the blood of the nation, depend upon it, will flow in the direction of Sydenham, and we can no more help ourselves than we can stop these fountains and Show days.

Mr. Dods was first, this time, in the large collections of twenty stove and greenhouse plants *in bloom*; and Mr. Whitbread, his opponent, was first in May. While I stood before the two collections, making up my mind, up comes one of the first and best authorities, not among the Tories, but among the florists, and he put my own thoughts in words, before I could speak. Mr. Whitbread, he said, was best ten days ago, but Mr. Dod's is best to day, and his collection will lose nothing of its shine for the next ten days to come. Mr. Dods is the first who brought out the *Crassula coccinea*, alias *Kalosanthes*, a false name, so early as the 9th of June, at Chiswick; and in the collection he had the oldest woody plant at the Show,—*Relbania squarrosa*, the yellow bedding plant,—if it would hold on all the season.

Mr. Whitbread had a fine *Clerodendrum splendens*, and several others from those he had in May, and he threw away the bad-spelled, wrong tally, from *Hedera tulipifera*: all his other names were right this time. But, after all my power and influence to get at the proper spelling of names, another exhibitor had the bareface to write *Hederoma*, instead of *Hedera*, on his plant. Instead of the pruning hook, I shall take out the battleaxe, next year, if I live, and shall smash every pot with a wrong tally; or else shame the gardener out of the country, by arguments, to show clearly that he is not fit to live amongst us any longer: then we shall see what that will do. To give prizes for good spelling is the worst thing that happened to gardeners in my time: the plan acts exactly the contrary of what is meant or supposed. The plan began with Dr. Lindley, who knew just as much how to do good for, and manage gardeners, as the man in the moon, under the very best intentions. The Doctor often began at the wrong end of the wedge, and this is one of that way of his working: Mr. Marnock has been hammering at the wrong end of the wedge ever since; and the best customer at the Park, and the best plant grower in England, does not choose to spell a common name, for the Crystal Palace Show, because he is not paid for writing correctly; and why should he, if they were foolish enough to pay.

The Messrs. Jackson, of Kingston, and Mr. Cutbush, of Barnet, were the most successful nurserymen for large collections of fine-leaved and variegated

plants, in collections of twenty, not in bloom. Mr. Cutbush had an extra first prize for his collection; Messrs. Jackson second prize and an extra third for another collection: but the plants, in all the collections, did not vary much from those at Chiswick the week before. The collections of twelve stove and greenhouse plants, were remarkable for uniform size—the best size for exhibitions or private use—and for good culture. Mr. Green was first here, with *Erica depressa*, *Cavendishii*, two *Allamandas*, one *Polygala*, *Rondeletia*, *Rhyncospermum jasminoides*, *Aphelaxis*, *Franeiscea*, *Stephanotis*, *Azalea*, and so forth. Mr. Epps, of Maidstone (who has exhibited for the last ten years), followed with the best grown plants, and took the second prize in twelves: he had two *Allamandas*, a *Dipladenia*, *Rhyncospermum*, *Dracophyllum gracile*, *Statice Holfordii*, two *Azaleas*, and others. Mr. Page and Mr. Peed took third prizes in twelves (some of them had his *Hedaroma* wrongly spelled), and Mr. Cutbush, of Barnet, a fourth in the same. After these came the six plant collections: Mr. Carson was first, with *Ixora alba* and *Azalea Apollo*, first pair; *Polygala* and *Stephanotis* next; and *Allamanda* and *Rhyncospermum* third pair: each pair in the true florist's style of setting, which is against the natural law of effect,—just like putting a white and a black horse for leaders and a black and a white horse to the pole of a carriage, instead of pairing the two whites and two blacks. Mr. Chilman took the second prize, with *Ixora* and *Vinca*, *Allamanda* and *Stephanotis*, and *Erica Cavendishii* and an *Aphelaxis*. Mr. Peed was third. Extra prizes to Mr. Smith and Mr. Williams (gardener to Miss Trail), and to Mr. Lambert, for these sixes. Then an extra fourth prize, to Mr. Oubridge and Mr. Rhodes, for large collections of twenty; an extra third prize, for twenty, to Mr. Young, gardener to Mrs. Stowe, Dulwich; and an extra second prize, for twenty, to Mr. Morris, who had *Astrapæa Wallichii*, an India-rubber plant, and a *Gesnera zebrina*, as at Chiswick. After these, Mr. Green stood first, for ten *Azaleas*; Mr. Peed and Mr. Somebody next, with no cards. Then Mr. Peed fourth, with six *Azaleas*; Mr. Page second ditto. Then Mr. Rhodes, an extra prize for a collection of twenty plants, in which was a *Pleroma elegans*, and also an extra for a collection of ten *Azaleas*. An extra to Mr. Kaile, for a collection of twelve stove and greenhouse plants. Such was the way these collections were placed.

PELARGONIUMS began with seedlings, and Mr. Turner had the first prize,—for *Hero* (a spotted one), *Fire Queen*, *Lightning*, *Glowworm*, *Unique*, and *Golden Hue*, all red and black kinds. A third prize to Mr. Beck, for *Prometheus*, an orange-red. In Fancies, Mr. Windsor was first, Mr. Lambert second, Mr. James third, and Mr. Oubridge fourth. A fourth prize was also given to Mr. Swannell, a new name: he is gardener to J. Russel, Esq., Harrow-on-the-Hill. In large Pelargoniums, Mr. Turner was first Messrs. Fraser second, and Mr. Gaines third. Mr. Nye was first with tens, Mr. Windsor second, Mr. Wiggins third, and Mr. Swannell fourth. For collections of twelve plants, Mr. Turner first, Mr. Dobson second, Messrs. Fraser third, and Mr. Gaines fourth. Mr. Gaines had a new and very fine kind in the *Diadematum* line, called *Roi de Feux*, a fine thing. A most remarkable specimen of *Viola*, and a *Sanspareil*, and Mr. Marnock (a spotted), were in Mr. Turner's lot. *Euphemia* (a light), *Viola*, *Bride* and *Vestal* (both white), in Mr. Dobson's. *Governor-General* and *Lord Raglan* (good match plants), were set on each side of *Gem of the West* (a white), by Mr. Windsor,—the best arrangement. *Eugene Duval*, *Viola*, and *Spotted Gem* (three very telling ones), in Mr. Nye's collection.

Such were more out of the common routine. Then followed a collection of *Everlastings*, which brought a first prize to Mr. Laybank. Then the *Roses* in pots, six in each collection: Mr. Perry was first; Mr. Rolland, second; and Mr. Francis, third, who also had a large collection of capital *Roses* in small pots and plants. The cut *Roses* were extra good, and more than numerous,—full fifty-six boxes of them,—but I took no names for any of the cut flowers. There were two or three collections of capital *Calceolarias*, from Messrs. Lambert, Dobson, and Cole, but I did not see the prizes; then *Gloxinias*, and after them an excellent assortment of *Fuchsias*.

The best white FUCHSIAS stood thus—*Hebe*, *Duchess of Lancaster*, *Pearl of England*, *Madame Sontag*, and *Clio*. The best reds were—*General Williams*, *Prince Albert* (a twelve feet pillar), *Bank's Glory*, and *Voltigeur*. I did not see the prizes.

Collections of different species of AZALEAS.—Mr. Ivery first, as usual. *Crispiflorum*, *Criterion*, *Iveryana*, and *Gem*, were the best. *Gem* was in full feather, and proves to be the best of all the red *Azaleas*. I said so from seeing only a cut bloom of it in Regent Street. It is the next best hit after *Criterion*. Mr. Peed had the second prize for kinds of *Azaleas*, and *Criterion* was his best subject. Then a third-prized collection of *Everlastings*, to Mr. Green. Then rare and new plants; and the newest of them was the “queer *Darlingtonia Californica*,” as the Doctor said of it at Chiswick, the week before, when it was exhibited for the first time in Europe. This queerness is a new form of *Sarracenia*, the pitchers being as much different from the Canadian race, as that race itself is from the oriental Pitcher Plants. Many fine plants of this extraordinary *Darlingtonia* may be seen in the Kingston Nursery, where I first made its acquaintance, Mr. George Jackson, the son and heir, being the greatest rummager in England. I have a constant chance, at my door, of seeing all the “queer” things, and the most precious, as they are introduced. The Doctor and I agree perfectly about “queer” things; we only differ on “common things.” They, the Messrs. Jackson, showed also *Rhododendron Maddeni* in bloom; and both their plant and the one at Chiswick, from the Pine-Apple Nursery, show this fine, large, white *Rhododendron* to be as close as, and of the habit of, *R. ponticum*. Also, a collection of new or rare *Cupressus* and *Thuja*s, but the cards were turned, and I must get the names from the nursery. Here were some new fancy *Geraniums*, not of any account. You would be astonished to see the quantities of new seedlings which are sent to me, and about which I never say hardly a word above board. Out of thirteen kinds now in my *exquisetum*, on trial in water, five kinds are far better than these under review, and yet I am going to tell the raiser not to say a word about them.

Messrs. Veitch and Son had a most beautiful new *Dracæna*, which will come in for variegated, or for fine-leaved plants; it is like some purplish brown-leaved *Yucca*, and had a first prize, as it certainly ought. Also, their new Holly-leaved Olive, *Tradescantia odoratissima*, *Begonia miranda*, *lazula*, *regina*, *rex*, and *Griffithii*. Also, *splendens argentea*, which, being placed against a red pedestal for a huge figure,—the red of the pedestal reflected in the silvery leaf,—made an exquisitely beautiful tint. Just try all the shining, fancy-leaved *Begonias* against a background of scarlet, or crimson, or orange, for a drawing-room touch, and tell us all about it.

All the above, as well as the fruit, were in the south nave and centre transept, and much in the way here set down,—mostly for our country cousins to see how we actually place our plants at a show in London. If

men had three lives instead of one, they would find out improvements in the art of placing different tribes of plants after each other at these shows. What one might call a *natural eye system*, but not a botanical natural system.

In the far-off end, or north nave, stood the Orchids, Ferns, Lycopods, Pitchers, scarlet Geraniums, Achimenes; Cockscombs, which were out of the common run; Balsams, which were execrable; Achimenes, which were scarcely out enough; and Gloxinias, which, some how or other, are not good exhibition subjects, however well they may be grown and blossomed.

For twenty Orchids, amateur's class, Mr. Gedney was first, Mr. Keele second, and Mr. Wooly third. For twelve Orchids, Mr. Carson was first, Mr. Clark second, M. Morris third, and Mr. Rhodes fourth. For sixes, Mr. Green was first; Mr. Dods second, with the best Orchids he showed this season.

In the nursery class, no one dared to face the Messrs. Jackson, of Kingston, who are at the top of the tree here. Among their fifteen plants were such things as—*Lælia purpurata*, *Phalænopsis grandiflora*, *Cattleya Mossiæ* and *M. superba* or *grandiflora*, *Aerides crispum*, *Saccolabium guttatum splendens*, *Cattleya Wagerii* (a large white with a yellow inside), *Odontoglossum Piscatorei* (a little gem of a thing), *Aerides Lindleyana*, *Anguloa Clowesii*, and so forth. Mr. Gedney had *Cattleya superba* (with eight blooms), *Cattleya lobata*, *Odontoglossum citrosum*, *Dendrobium tortilis*, and *Lælia purpurata*. Mr. Keele had the largest *Brassia verrucosa major* that was ever shown; but among all the rest of the names, or kinds, there is no need of more gossip,—more than to say, that air plants can stand a hot summer better than most plants, but that Ferns stand better than all the rest, for they were as fresh and shining as when the fawns are dropped, and hid amongst them on the Grampian range, and that, all the world do not know, happens just about this time of the year.

There were seven or eight collections of twelve Ferns, and Mr. Baillie (gardener to W. C. Carbonell, Esq., Harrow Road), had the first prize. Mr. Lavey was the first for British Ferns. A fourth prize was all I could see for Lycopods.

HEATHS.—Mr. Peed was first and third, with collections of ten; and Mr. Rhodes was second. Mr. Laybank was first, with six Heaths; and Mr. Phipps (gardener to Earl Carnarvon), had a first prize, for twelve of the best dwarf Cockscombs we ever had so early.

BEDDING GERANIUMS.—There were two lots of scarlet, and two or three of variegated Geraniums, but nothing new, or what has not been noticed already this season. I was on the balance for the last half dozen years,—but swaying deeper and deeper to the right hand side each year,—till the 16th of June, 1858, when the scales came down plump to the flower-bed, and showed, most conclusively, that all the Societies, all the Judges, and all the gardeners, myself among the number, have been, and are, wrong entirely, and altogether, about the way of exhibiting scarlet and all bedding Geraniums before the public. But the reasons must stand over, till the press of matter on our hands can be reduced to a comfortable pitch.

FRUIT.—The fruit has been uniformly good at all the Shows this season. There was a large and very good show of it here, and the only hitch I noticed the whole day was among the Melons. One of our great gardeners put, or entered, a *White-fleshed* Melon in the class for *Green-fleshed*, and the Judges gave him one of the best prizes for it. The said gardener, and the Judges aforesaid, were not, perhaps, to blame,—the fault must surely have been in the schedule; but if I was an exhibitor of a good *Green-flesh* Melon, which is entirely of a distinct race from the whites, yellows, and scarlets, I would insist on the letter of the law before the Lord High Chancellor, sooner than give up the point. There were thirty-three Melons, Vines in pots, fourteen Pine Apples, fifteen dishes of Peaches

and Nectarines, Cherries and Grapes in great abundance, and eleven dishes of Strawberries. Mr. Bailey, of Shardeloes, took another first prize with his large *Providence* Pine, which is over nine pounds, and has seen its best days. Another Mr. Baily, namely, Mr. Young, gardener to C. Baily, Esq., M.P. for some place in the south-west of England, took the first prize for the best-looking *Queen* which has been seen by the reporter this season;—pity the weight was not given. Mr. Williams, Castle Gardens, Whitehaven, and Mr. Burn, Penrhyn Castle, took each a second prize for *Queens*; and the third prize went to Mr. Smith, gardener to A. Anderson, Esq., Norwood. For the best single Pine, Mr. Turnbull, Blenheim, took the first prize; and Mr. Davies took a first prize in single Pines. For a collection of three dishes of Grapes, and three bunches in each dish, there was a spirited race among the dukes, his Grace of Sutherland winning fairly by a head and neck, and his other Grace of Marlborough fast up to his shoulder-blade; Mr. Fleming rode for the winner, and Mr. Burn for the second best. Mr. Fleming had three *Chasselas Musqué* in the centre, three *Black Hamburgs* on one side, and three of his new *Black Trentham* Grape on the other. Mr. Burn made the same disposition,—three *Muscats of Alexandria* in the middle, *St. Peter's* and *Black Hamburg*, to match each other, on either side; and Mr. Tegg was third in the race, good luck to him for the spirited attempt. Also, an extra prize for another bold attempt on the part of Mr. Smith, Liscard Hall, Cheshire. His were one black dish and two white ones—*Josling's St. Albans* being one of the names—the same as *Chasselas Musqué*. I think Mr. Frost, Preston Hall, started in this race, and some others; but the crowds pressed so heavily that I could not catch their tether. Mr. Fleming took the first prize with his *Trentham* Melon: I stuck my knife in it and found it exquisitely flavoured. Mr. Tegg was second; and Mr. Jaek, Beekenhams, third, for first-rate Melons. For the best *Persian* Melon, Mr. Davies, of Hammersmith, took the first prize, who also took a first in single Pines. The second best *Persian* from Mr. Meredith, Vine Cottage, somewhere near Liverpool. Then a run for the best single dish of Black Grapes, and Mr. Fleming first again, with three splendid bunches of *Black Hamburgs*. Mr. Frost was second, and Mr. Smith, Liscard Hall, third, for single dishes of White Grapes. Mr. Page, Mr. Frost, and Mr. Anderson, took the prizes in that order; and Mr. Henderson, Orton Hall, had a first prize for a dish of Black. Also, Mr. Jaek, gardener to J. Caird, Esq., Beekenhams, a splendid dish of *Black Hamburgs*, which would have been next to Mr. Fleming's, were it not that the bloom got hurt. For the best dish of *White Muscats*, Mr. Turnbull was in again first; second, Mr. Chambers, gardener to H. Fowler, Esq., Woodford. His berries were enormous, but small bunches. The third prize to Mr. Emery, gardener to — Moss, Esq., Chadwell Heath. For twelve pounds of Grapes, Mr. Frogley, market-gardener, Hoddesden, and Mr. Anderson, Lambeth, took the best prizes; and Mr. Henderson, the third. Mr. Fleming was first in Peaches, Nectarines, and White Cherries. Mr. Millar second in Peaches. Mr. Allen second in Nectarines; Mr. Henderson, ditto; and Mr. Hill third. A prize for Figs to Mr. Gunt, gardener to Sir S. M. Sevant, Bart., Ardgowan, Seotland. D. BEATON.

SOME NOTES ON BUSH FRUITS, AND THEIR SUMMER PRUNING.

FROM all appearances, the present is likely to be a most prolific summer, with the subjects of the following remarks. And, since the comfort of thousands depends in some degree on success in these matters, I think they as well deserve to be represented in the pages of the COTTAGE GARDENER as our more costly fruits. But let any one, who loses sight of these usefuls, take fully into consideration the singular economy in their habits of growth, as well as the extensive uses to which they are applied. Only suppose for a moment, that there had been no bushes,—as Gooseberries, Raspberries, &c.,—but that all these had to be gathered from large trees,—such as Apples and Pears. Here would be trouble and expense,—which

our readers, perhaps, have never thoroughly considered. And then the quantity of land they would occupy and shade. But how well they fit in with a general garden system, and, when highly cultivated, conduce to appearances, I need hardly mention. The subjects with which we have to deal at present are—Raspberries, Gooseberries, Black Currants, and Red and White Currants.

RASPBERRIES are, perhaps, more liable to suffer from lack of moisture than from any other cause. They like a soil, therefore, which contains a permanency, without stagnation. They will, for the above reason, succeed pretty well in a half-shaded situation: but the fruit never attains that high flavour, so much esteemed in the Raspberry. We have some highly improved kinds of the Raspberry at present in cultivation. One called the *Sandon Hall* is a very fine fruit, of great size and excellent flavour: I think it superior to the *Fastolff*, in all but long bearing properties; for, with me, the latter continues in bearing long after the other kinds; appearing to partake, in some degree, of the double-bearing. Those who desire Raspberries through the end of the summer, should prune some of the canes back to later eyes, or buds, after the bushes have sprouted an inch or two. This forces them to sprout lower down the stem. Of course, later Raspberries like liberal manurings; indeed they should have a little annually, and no digging over the roots should be permitted.

GOOSEBERRIES.—Amongst all the bush fruits this delights most in an open, free, and generous soil,—one rather dark in colour seems to suit it best. The Red and White Currant like a similar soil; but, if too generous, they will produce too much watery wood. It is, however, difficult to make the soil too good for Gooseberries, with any reasonable amount of manurial matters. Many good gardeners, in these parts, pack about half a barrowful round the stem of each bearing bush every winter. This washes down in nutrition to the roots, and keeps them damp in dry and hot periods. Little summer pruning is needed for the Gooseberry,—just enough to keep the boughs from dangling too low, and becoming splashed. For this purpose the ordinary shears may be used, only removing any portion of the points which are disposed to touch the soil.

BLACK CURRANTS.—These love a moist soil: drought, especially when they are in blossom, or swelling, is almost sure to engender aphides. For this reason, cottagers in country places are in the habit of packing damp manure round their stems, in order to retain the moisture, as well as to encourage surface fibres. In dry periods, during the end of May and first week in June, those who suspect any drought at the root, should give their bushes a thorough soaking of water; if soapsuds are mixed with it all the better: this will generally secure a good crop, and avert the attacks of the fly. Here I must protest against the use of the spade. I do not allow it to come within three feet of my bushes. Summer pruning is not needed with the Black Currant; unless it be a few of the lower shoots, bending with their weight and touching the ground. If, however, any of the young points grow to an inconvenient height, they may be pinched, or cut back, any time during the month of June, leaving a few of the lower leaves.

RED CURRANTS.—The Reds are much coarser-growing bushes than the Whites, and do not require so much manure: indeed, where they make coarse breastwood, manure is out of the question; whereas it is not easy to over-manure the Whites. Both Red and White Currants delight in a free and open soil, and will endure drought much better than the Black

Currant. They are apt to produce an inconvenient amount of breast shoots, which rob the fruit considerably; and here is a case where summer pruning is of much service. This is performed when the breast shoots are about nine inches in length: they may be shortened to three inches, which is necessary to protect them from intense sunlight; for, if it shines much immediately on the berries, before the colouring period, they will lose size as well as juiciness. But the terminal points, also, are apt to lengthen inconveniently: these may be shortened when from eight inches to a foot in length.

These proceedings will throw much strength into the berry, which is most desirable. It is of no use suffering young growing spray to any indefinite extent: it is but adding more woody matter; whereas the prime object should be, to throw as much into the fruit as possible. As for weak growth, that merely points to the need of manure, and may be amended by surface dressings, or by digging out a trench around them, and introducing manurial matters.

Amongst the chief recommendations I have to offer, let me urge that there be no surface digging at any period nearer than three feet from the bole of the tree: there is more harm done with the spade than by any other means. It is the same, indeed, with most other fruit trees.

WHITE CURRANTS.—These like a light and rich soil, and require it to be generous. They should by all means have a surface dressing—only a little—every winter, if fine fruit is desired. They require less shortening than the Red, and seldom much summer pruning of the breast shoots. It is astonishing what a weight of fruit a White Currant bush will produce, if of a good kind, and properly handled.

I may now offer a few miscellaneous remarks and suggestions. In the first place, as to insects. A paper has appeared on this subject, a number or two back, as regards the Gooseberry. Currants are chiefly liable to the aphis, and a troublesome enemy it is, having the power of distorting the foliage to an immense extent, in fact, forming thereby a place of retreat that almost bids us defiance. The only plan is, to attack them whilst young with tobacco water, before the foliage collapses. Many, however, may be removed in the summer pruning, for all gardeners have not labourers enough to meet the increasing contingencies of later years; and this, more by far than the want of knowledge, is the cause of many of the evils that we still find besetting the fruit gardener. The aphis is the most powerful enemy of the Black Currant, and may be attacked similarly; but preventives go a long way, as before observed. Thorough waterings, about a couple of times, the last week in May and the middle of June, will effect wonders: Black Currants will endure almost any amount of moisture.

The retarding of bush fruit is a point too little noticed or attended to, and this chiefly through the pressure of other matters at the period proper to attend to them. Gooseberries, Red and White Currants, Raspberries, &c., look exceedingly ornamental when trained on trellises, providing they can at all times be kept in trim. If, however, they cannot be properly attended to, such had better be omitted. On perpendicular rails, too, they are very easily protected, or shaded, when requisite; and this is a consideration as to both earliness and lateness, as well as to birds. Trellises of strained wire are cheaply knocked up nowadays, and may be admirably adapted to their habits. Further, with regard to pruning in the rest season, I may observe, that a too sparing hand is the common fault. Gooseberries, especially, require more thinning than is commonly awarded them. The interior shoots of the bush, in healthy trees, should be

almost entirely pruned away, and the bearing confined chiefly to the extreme points. They are thus gathered with more ease: indeed, the bushes may be stripped in half the time of those choked up in the interior. The fruit, also, is much finer, and the crop will be found to tell amazingly in bulk. As for the Red and White Currants, their side spray—if other points of management be right—may be all pruned close to within half an inch of the main stem. There is, thus, less summer spray to prune back, and the fruit is, in consequence, much larger. Those who grow for exhibition purposes may use liquid manure occasionally, during the swelling process, as also just before the fruit begins to colour. This will much increase the size and general appearance. R. ERRINGTON.

HORTICULTURAL SOCIETY'S SHOW AT CHISWICK.—JUNE 9TH.

ACCORDING to our promise made last week, we now publish the list of prizes awarded for fruits.

PINE-APPLES (collection of three distinct varieties).—First, Mr. D. Clement, Oak Hill, East Barnet. Second, Mr. Gilham, market gardener, Mogdon Lane, Isleworth.

PINE-APPLES (Providence, or other large sorts, single specimen).—First, Mr. Bailey, gardener to J. T. Drake, Esq., Shardeloes, Amersham, Bucks. Second, Mr. J. Oates, F.H.S., gardener to Lord Leigh, Stoneleigh Abbey, Warwickshire. Third, Mr. Jackson, gardener to Lord Scarsdale, Kedleston, Derbyshire.

PINE-APPLES (Queen's, single specimen).—First, Mr. Burn, gardener to the Hon. Col. Pennant, Penrhyn Castle, Bangor. Equal—Second, Mr. Bailey, gardener to J. T. Drake, Esq., Shardeloes, Amersham; Third, Mr. Robinson, gardener to E. R. Tunno, Esq., F.H.S., Warnford Park. Extra—Mr. John Maher, gardener to Sir R. W. Bulkeley, Bart., F.H.S., Baron's Hill, Anglesea.

Prize offered by C. W. Dilke, Esq., V.P.H.S., for the best Pine of any kind.—Mr. Bailey, gardener to J. T. Drake, Esq., Shardeloes, Amersham.

GRAPES (Miscellaneous, Mr. C. W. Dilke's prize).—First, Mr. Frost, gardener to E. L. Betts, Esq., F.H.S., Preston Hall, Maidstone.

GRAPES (Black Hamburgh, one basket).—First, Mr. Allen, gardener to J. B. Glegg, Esq., F.H.S., Chelford, Knutsford. Second, Mr. Wm. Hill, gardener to Ralph Sneyd, Esq., F.H.S., Keele Hall, Staffordshire. Third, Mr. Fleming, F.H.S., gardener to the Duke of Sutherland, F.H.S., Trentham. Extra—Mr. Wilmot, market gardener, Isleworth; Mr. J. Taylor, gardener to C. A. Anbury, Esq., East Barnet; Mr. Frost, gardener to E. L. Betts, Esq., F.H.S., Preston Hall, Maidstone; Mr. Mould, gardener to P. Rose, Esq., Rayner House, Wycombe.

GRAPES (Royal Muscadine, or other white sort, one basket).—First, Mr. Bousie, gardener to the Right Hon. H. Labouchere, Stoke Park, Slough. Second, Mr. Chalmers, gardener to the Lord Southampton, F.H.S., Whittlebury Lodge, Towcester. Third, Mr. Jos. Allport, gardener to Henry Akroyd, Esq., F.H.S., Doddington Park.

GRAPES (Muscats, one basket).—First, Mr. James Tegg, gardener to Baron Hambro, F.H.S., Roehampton. Second, Mr. J. Allport, gardener to H. Akroyd, Esq., F.H.S., Doddington Park. Third, Mr. John Clark, F.H.S., gardener to the Earl of Darnley, Cobham, Kent.

GRAPES (Frontignans, one basket).—First, Mr. Jos. Allport, gardener to H. Akroyd, Esq., F.H.S., Doddington Park, Nantwich. Second, Mr. John Clark, F.H.S., gardener to the Earl of Darnley, Cobham, Kent.

WEST'S ST. PETER'S GRAPES.—First, Mr. Jos. Allport, gardener to H. Akroyd, Esq., F.H.S., Doddington Park, Nantwich.

VINES (In pots; in twos).—First, Mr. Ivison, gardener to the Duke of Northumberland, F.H.S., Sion House, Brentford. Second, Mr. C. W. Alderson, market gardener, South Lambeth. Third, Mr. Kaile, gardener to the Earl of Lovelace, F.H.S., East Horsley Towers, Ripley.

MELONS (Green-fleshed).—First, Mr. Ingram, gardener to J. J. Blandy, Esq., V.P.H.S., Highgrove, Reading. Second, Mr. Bercham, gardener to Sir Fitzroy Kelly, Sproughton. Third, Mr. H. Chilman, gardener to Mrs. Smith, Ashted House, Epsom.

MELONS (Scarlet-flesh).—First, Mr. Bailey, gardener to J. T. Drake, Esq., Shardeloes, Amersham. Second, Mr. Frost, gardener to E. L. Betts, Esq., F.H.S., Preston Hall, Maidstone.

PEACHES (Two baskets, distinct sorts).—First, Mr. Davies, gardener to J. Dixon, Esq., Astle Park, Chelford. Second, Mr. Cotterell, F.H.S., gardener to the Earl of Lisburne, Crosswood Park, Aberystwith.

PEACHES (One basket).—First, Mr. Davies, gardener to J. Dixon, Esq., Astle Park, Chelford. Second, Mr. Masters, gardener to the Earl of Macclesfield, Sherburn Castle, Oxon. Equal—Third, Mr. Hill, gardener to Ralph Sneyd, Esq., F.H.S., Keele Hall, Staffordshire. Extra—Mr. H. Constantine, gardener to C. Mills, Esq., Hillingdon Court, Uxbridge.

NECTARINES (Two baskets, distinct sorts).—First, Mr. G. Fleming, F.H.S., gardener to the Duke of Sutherland, F.H.S., Trentham.

NECTARINES (One basket).—First, Mr. G. Fleming, F.H.S., gardener to the Duke of Sutherland, F.H.S., Trentham. Second, Mr. Tegg, gardener to A. Pryor, Esq., F.H.S., Roehampton. Third, Mr. Farthing, gardener to Lord Ashburton, F.H.S., The Grange, Alresford.

APRICOTS.—First, Mr. Lunt, gardener to Sir M. Schaw Stewart, Bart., Ardgowau, Greenock.

Figs (in Sixes).—First, Mr. Farthing, gardener to the Lord Ashburton, F.H.S., The Grange, Alresford. Second, Mr. Frost, gardener to E. L. Betts, Esq., F.H.S., Preston Hall, Maidstone. Third, Mr. Ivison, gardener to the Duke of Northumberland, F.H.S., Sion House, Brentford.

CHERRIES (Black, in single dishes).—First, Mr. G. Fleming, F.H.S., gardener to the Duke of Sutherland, F.H.S., Trentham.

STRAWBERRIES (Three baskets, distinct sorts).—First, Mr. Widdowson, gardener at Chorley Wood House, near Rickmansworth.

STRAWBERRIES (British Queen, single baskets).—First, Mr. R. Smith, market gardener, Twickenham.

STRAWBERRIES (not British Queens, single baskets).—First, Mr. Bailey, gardener to J. T. Drake, Esq., Shardeloes, Amersham, Bucks. Second, Mr. R. Smith, market gardener, Twickenham. Third, Mr. James Woods, gardener to W. Beckford, Esq., Buxley Lodge, Esher.

MISCELLANEOUS FRUIT.—Second Certificate, Richard Gunter, Esq., F.H.S., Burlington Cottage, Turnham Green, for a dish of Winter Cherries. First do., Mr. Higgs, gardener to Mrs. Barchard, F.H.S., Putney Heath, for Six distinct kinds of English grown Oranges and Lemons. Second do., Mr. Ivison, gardener to the Duke of Northumberland, F.H.S., for a dish of Rose Apples. Second do., Mr. Kaile, gardener to the Earl of Lovelace, F.H.S., East Horsley Towers, Ripley, for Strawberries in pots. First do., Mr. Fleming, F.H.S., gardener to the Duke of Sutherland, F.H.S., Trentham, for Four pots of Trentham Black Grape. Second do., Mr. Burnell, gardener to the Rev. T. Thurlow, Raynard's Park, Cranley, for a dish of Pears. First do., Mr. Jackson, gardener to Lord Scarsdale, Kedleston, Derby, for Three Providence Pine Apples. Second do., Messrs. Lane and Son, Great Berkhamstead, for Cherries in pots. Second do., Rev. L. V. Harcourt, V.P.H.S., for Two dishes of Apples. First do., Mr. Cuthbert, gardener to S. Rickards, Esq., F.H.S., Shalemaar, Acton, for Six Oranges. First do., Mr. Cuthbert, gardener to S. Rickards, Esq., F.H.S., Shalemaar, Acton, for Six Lemons. First do., Mr. Burn, gardener to the Hon. Col. Pennant, Penrhyn Castle, Bangor, for a Queen Pine Apple. First do., Mr. J. Lakeman, gardener to J. Campbell, Esq., Hendon, for Seedling Citrons.

COLLECTION OF VEGETABLES (Amateurs).—First, Mr. J. B. Whiting, gardener to H. T. Hope, Esq., F.H.S., The Deepdene, Dorking. Second, Mr. Geo. Lambert, Oakwood, Chichester. Third, Mr. M. Higgs, gardener to Mrs. Barchard, F.H.S., Putney Heath.

THE LATE MR. ROBERT BROWN.

ROBERT BROWN, one of those luminaries of science whose modest and retiring worth was little known to the general public, but who was all the more highly appreciated in those scientific circles of which he was so distinguished an ornament, was the son of a Scottish Episcopalian clergyman, and was born at Montrose on the 21st of December, 1773. His academical education was acquired first at Marischal College, Aberdeen, and subsequently at the University of Edinburgh, where he completed his medical studies in 1795, and in the same year accompanied a Scottish Fencible Regiment, in the double capacity of ensign and assistant-surgeon, to Ireland. His intense love and peculiar aptitude for botanical study had already developed itself, and recommended him to the notice of Sir Joseph Banks, who continued through life to be his sincere and ardent friend. On Sir Joseph's recommendation, and attracted by the more than golden promise which the then unexplored regions of New Holland held out to the botanical inquirer, he threw up his commissions, and, in 1801, embarked as naturalist in the expedition under Captain Flinders for the survey of the Australian coast. From this expedition he returned to England in 1805, bringing with him nearly 4000 species of plants, a large proportion of which were entirely new to science, and bringing with him, also, an inexhaustible store of new ideas in relation to the characters, distribution, and affinities of the singular vegetation which distinguishes the great continent of Australia from every other botanical region. To work out these ideas, both in relation to the plants of New Holland and in their comparison with those of other parts of the world, with wonderful sagacity, with the utmost minuteness of detail, and, at the same time, with the most comprehensive generalisation, was the labour of many succeeding years. His memoirs on "Asclepiadæ and Proteaceæ," in the transactions of the Linnean Society; his "Prodromus Floræ Novæ Hollandiæ," vol. i., published in 1810; and his "General Remarks, Geographical and Systematical, on the Botany of Terra Australis," published in 1814, revealed to the scientific world how great a master in botanical science had arisen among us. Nor was the world slow in recognising his merits. The natural system of Jussieu had hitherto made but little progress in England, or anywhere out of France, but its adoption by one who was instinctively recognised as the first botanist of the age, and the important modifications which he introduced into it, speedily compelled an almost universal assent to its principles, and

led to its general substitution in place of the Linnæan method. It is not our purpose here to enter into anything like a detailed account of the numerous memoirs contained in the transactions of Societies, and in the appendices to the most important books of travel or voyages of discovery, in which he shed new and unexpected light on many of the most difficult problems in the reproduction, the anatomy, the distribution, the characters, and the affinities of plants. It is sufficient to say that, the universal consent of botanists recognised the title conferred upon him by his illustrious friend Alexander von Humboldt, of "Botanicorum facile Princeps;" and that nearly every scientific Society, both at home and abroad, considered itself honoured by the enrolment of his name in the list of its members. After the death of Dryander, in 1810, he received the charge of the noble library and splendid collections of Sir Joseph Banks, who bequeathed to him their enjoyment for life. At a later period they were, with his assent, transferred to the British Museum, and for the last thirty years he has been Keeper of Botany in that national establishment. He received, also, during the Administration of Sir Robert Peel, a pension of £200 per annum, in recognition of his distinguished merits. In 1833, he was elected one of the eight foreign associates of the Academy of Sciences of the Institute of France, his competitors being Bessel, Von Buch, Faraday, Herschell, Jacobi, Meckel, Mitscherlich, Oersted, and Plana. In 1839, the Council of the Royal Society awarded the Copley Medal, the highest honour at their disposal, "for his discoveries during a series of years on the subject of vegetable impregnation;" and, in 1849, he became President of the Linnæan Society, of which he had been in earlier life, for many years, librarian. The University of Oxford conferred upon him, in 1832, the honorary degree of D.C.L., in company with Dalton, Faraday, and Brewster; and he received from the King of Prussia the decoration of the highest Prussian civil Order, "pour le mérite," of which Order Baron Von Humboldt is Chancellor. This illustrious man still survives, at the age of 88, to deplore the loss of one whom he always regarded with feelings in which veneration and affection were equally mingled.

We have hitherto spoken of Robert Brown only as a man of science, but those who were admitted to the privilege of his intimacy, and who knew him as a man, will bear unanimous testimony to the unvarying simplicity, truthfulness, and benevolence of his character. With an appearance of shyness and reserve in the presence of strangers, he combined an open-heartedness in relation to his familiar friends, and a fund of agreeable humour, never bitter or caustic, but always appropriate to the occasion, the outpourings of which it was delightful to witness. But what distinguished him above all other traits was the singular uprightness of his judgment, which rendered him on all difficult occasions an invaluable counsellor to those who had the privilege of seeking his advice. How profoundly these admirable qualities had endeared him to the hearts of his friends was unmistakeably manifested by the sympathetic tenderness with which his last hours were watched and soothed. With his faculties unclouded to the last, he died on the 10th inst., surrounded by his collections, in the room which had formerly been the library of Sir Joseph Banks. "It was in the year 1810," says one of his distinguished friends, who contributed greatly to relieve the sufferings of his last illness, "that I first became acquainted with Mr. Brown, within three feet of the same place in the same room where I saw him so nearly drawing his last breath three days ago. He was the same simple-minded, kind-hearted man in November, 1810, as he was in June, 1858, nothing changed but as time changes us all."

His funeral took place on the 15th inst., at the cemetery at Kensal Green, to which it was attended by a numerous concourse of his scientific and personal friends.—(*Times*.)

NEW BOOKS.

THE ORCHARD HOUSE.*—The cultivation of fruit trees in pots, under glass, is now practised to a large extent, and with

* *The Orchard House; or, the Cultivation of Fruit Trees in Pots, under Glass.* By Thomas Rivers, of the Nurseries, Sawbridgeworth, Herts. Fifth Edition. London: Longmans, 1858.

various degrees of success. There are some people who have the happy knack of doing everything they undertake to their own satisfaction, and the admiration of everybody else; and there are others who, do what they will, and take what trouble you may with them, are always blundering and floundering. Many examples of both of these characteristics are found in the culture of fruit trees in glass houses. In the same county, or even in the same town, you may see an instance, where the trees are full of luxuriance, with well-developed dark green foliage, flat and shining, as if they had been laundried, and the fruit large, highly-coloured, and succulent; but, perhaps, just over the wall, is another house, where the plants are smothered with green fly and red spider, and the fruit rarely ever attains above the size of a nutmeg, or a walnut at the most, with a flavour remarkable for its bitterness. Now, it is possible to overcome all these drawbacks. Mr. Rivers has shown how he manages *his* trees, and his instructions, in the little work before us, are so plain, so easy, and intelligible, that we recommend all who would do as he does to possess themselves of so sure a guide. The cultivation of fruit trees in pots requires much care and watchfulness, and those who begin it must make up their mind to encounter obstacles; but these are neither so formidable nor insurmountable but that any one, having ordinary capacity, may easily overcome them. Mr. Rivers has made the subject attractive and popular, and those who will follow his instructions cannot fail to succeed.

As an example of the manner in which the subject is treated, and by way of calling attention to a subject on which much of the success or failure of orchard-house culture depends, we give the following:—"In the orchard-house culture of Peaches and Nectarines, syringing must play an important part; for the red spider is so fond of their leaves, that, like Sinbad's Old Man of the Sea, he will stick closely, and cannot be dislodged without applying the syringe close to the under surface of the leaves. If this pest be suffered to make the least progress, the flavour of the fruit will be entirely destroyed. A small pocket lens in the hands of the amateur will be the best instrument to discern it; looking closely at the under surface of the leaves, if it be there, a small bright-red speck, like a red grain of sand, will be seen. The experienced gardener does not look for them. One glance at the upper surface of those leaves, which show some minute yellow specks, is quite enough for him. If, therefore, the least sign be apparent, continue the regular syringing, even till the fruit is ripe; otherwise, syringing may be discontinued when the Peaches and Nectarines commence to soften, preparatory to ripening."

We observe an error at page 115, in classing *Kirke's Plum* among the kitchen varieties. It is essentially a dessert Plum, and one of the best in cultivation.

BEAUTY OF THE SEA-WEEDS.—Of all the sea-weeds for an aquarium, the *Green Laver* is, perhaps, the very best. It is very pretty, from its delicate green colour, and the various folds and puckers into which it throws itself. Its power of expiring oxygen seems to be almost unlimited. I have in my aquarium a large plant of this species, which generally lives very contentedly in the place where it had been deposited. But, a few days ago, the sun shone brightly enough to pierce through the veil of smoke with which the metropolis is generally hidden from his presence, and consequently there was a greater abundance of light than usual. On looking at the aquarium, I found that the ulva had risen in the water, and was hanging in most elegant festoons from the surface, forming emerald eaves and grottoes, such as the sea-nymphs would love. Even at a little distance it was a pretty sight, but a closer inspection revealed still more beauties; for, being excited by the unwonted light, the plant had poured forth so much oxygen, that its entire surface was thickly studded with tiny sparkling beads, that had buoyed up the whole plant, each bubble acting as a miniature balloon. When, however, a black cloud came over the sun, the bubbles soon detached themselves, ascended to the surface, and, as there were no more to take their place, down dropped the plant to the bottom.—(*The Common Objects of the Sea-shore, by the Rev. J. G. Wood.*)

ON SOME MOULDS REFERRED BY AUTHORS TO FUMAGO, AND ON CERTAIN ALLIED OR ANALAGOUS FORMS.

By the Rev. M. J. BERKELEY, M.A., F.L.S., and J. B. H. J. DESMAZIERES.

(Concluded from page 163.)

*** (MICROXIPHIMUM) HARV. PERIDIA SIMPLE, SUBULATE.

11. *C. Footii*, Berk. and Desm. Maculæforme setulosum; peridiis subulatis simplicibus; mycelio subhyalino subgela-

Forming little, generally, orbicular thin patches, which, under a microscope, are setulose. Mycelium subgelatinotis, readily imbibing water, subhyaline, when young subcontinuous, when old distinctly moniliform; the articulations elliptic, with one or two nuclei. Peridia dark, setiform, outer coat hyaline, the threads at first cylindrical, at length moniliform, hyaline, the ultimate joints breaking off; in some states the peridia are quite naked. They frequently, but not universally, spring from a little bulbous base.

The fruit has not been observed in this species. Its discovery may warrant the formation of the genus *Microxiphium*, Harv. It is scarcely probable that the asci in so narrow a space should be of the same nature as in the other species. It occurs so frequently with *Strigula Babingtonii*, that it has been suggested that it bears the same relation to that species that *Tricharia* does to certain epiphyllous lichens. It is, however, found without any trace of the lichen, and the lichen occurs equally free from the bristly threads. In the absence of all information respecting the sporidia, it is impossible to come to any certain conclusion: it is, however, highly probable that both in *Tricharia* and our present species a great similarity may exist in this respect. The specimen on *Mercurialis* was at first thought distinct, but there are no sufficient characters to warrant its being kept apart at present.

We can scarcely suppose that all the species proposed above will be retained. The first and three last are, at any rate, good species; it is, perhaps, more doubtful whether all the intermediate species are equally good, though the differences are sufficiently striking. Were the fruit of all perfectly known, we might speak more confidently.

We conclude our memoir with the notice of a new genus, which is abundantly produced in certain situations in South Carolina, though the fructification is of rare occurrence. It is generally, if not always, accompanied by a new species of *Myriangium*, but has not the slightest connection with it. The threads are cylindrical, inarticulate, fasciculate, creeping widely over the matrix, of a shining black; giving off branches from the fascicles, which are themselves fasciculate, and often confluent with one another. These are at times contained in a common sheath, exactly as in the genus *Microcoleus*. They are for the most part barren, but occasionally fructification is produced on the edge of the fascicles, on the free-branched apices of the threads. It consists of large, globose, dark spores, which contain a single nucleus; from which circumstance we have called it *Glenospora*. It is analogous to *Acremonium*, but that belongs to the group of *Mucedineæ*, while this belongs to *Dematiæ*—resembling closely the mucedinous genus *Brachycarphium*, Berk., discovered in amber by Dr. Thomas, and figured in the "Annals of Natural History" for December, 1848.

GLENOSPORA, Berk. and Desm.

Hyphasma repens late expansum, floccis fasciculatis supra articulatis communi membranâ vestitis ramosis, prope apices è fasciculis liberatos fructificantibus contextum. Sporæ amplæ globosæ, sæpe binæ coloratæ, nucleo globoso. Analogon *Acremonii* quoad fructum, *Brachycarphii* quoad *Hyphasma* et apices filamentorum liberatos fructificantes. Vix ulli *Dematiearum* arctè affinis.

Hab. in corticem *Nyssæ aquaticæ*, *Aceris rubri*, et *Prini verticillati*, frequens in sylvis humidis et paludibus Carolinæ Inferioris, *Myriangii* sæpissime si non semper socius.

Glenospora Curtisii, Berk. and Desm. "Curt.," No. 1442, 1021. (Fig. 11.)

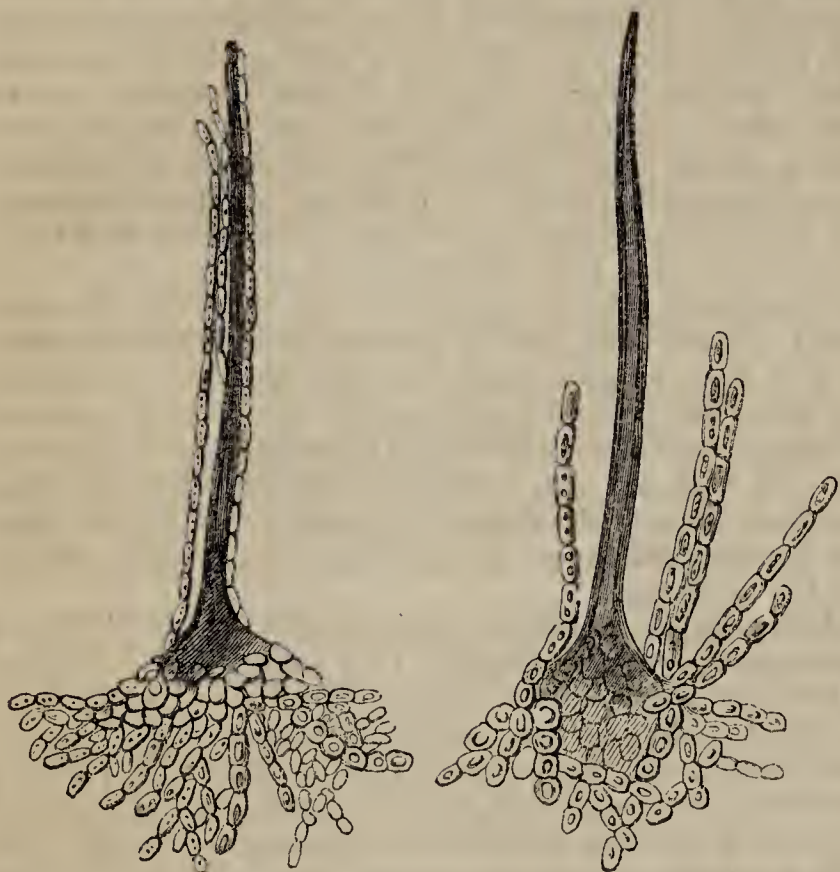


Fig. 10.

Fig. 10. *Capnodium Footii*, B. and D. Peridia and mature mycelium, from *Mercurialis perennis*. Sketched by Mr. Broome.

tinoso. *Fumago Fagi*, Pers., "Myc. Eur.," vol. i., p. 10. *Microxiphium Footii*, Harv. MSS.

Extremely common on the leaves of evergreens, when it is often accompanied by *Strigula Babingtonii*, and also on the leaves of deciduous trees, as the Beech, and even on herbaceous plants, as *Mercurialis perennis* (Figs. 10 & 10*).

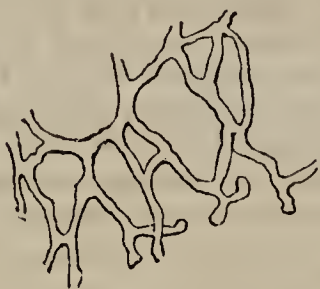


Fig. 10*.

Fig. 10*. Immature mycelium, from the same species, growing on Laurel.



Fig. 11.

Fig. 11. *Glenospora Curtisii*, B. and D. Portion of plant, showing the fascicles of threads with their fructifying branches; a portion of the fructifying threads separated from the fascicles, and a single spore, more or less highly magnified.

On the bark of *Nyssa aquatica*, *Prinos verticillata*, and *Acer rubrum*. Extremely common in South Carolina.—Rev. M. A. Curtis.

It may be remarked, that Mr. Thwaites found a very similar production, only with hyaline threads, mixed up with *Coccochloris Brebissonii*, growing in dripping places near Bristol. The fructification and the whole structure are very similar. At present it has not been found by itself, so as to enable him to ascertain its habit and colour when freely developed. The spores are dark brown, and have a pretty effect on the colourless filaments. This may be called *Glenospora Thwaitesii*, but we have not thought it necessary to give specific characters, as we have scarcely sufficient information for this purpose. The spores of *G. Curtisii*, it may be observed, when viewed by transmitted light, have a lilac tinge, as have also the threads in portions of the stratum, but not constantly.—(*Horticultural Society's Journal*.)

NOTES FROM CUMBERLAND.

IN Cumberland, about ten miles from the Scottish border, from whence I ought to have dated my letter, *Primula cortusoides* is perfectly hardy. I plant it out in October, and, immediately after flowering, remove the plants to a shady border till the following autumn. I always have a glorious spring bed in May. My soil is light.

If possible, to avoid your alternative respecting the *British Queen* Strawberry, I last summer, after fruiting, cut all the plants down, to weaken them; and all that I can say at present is, that they show threefold more blossom than I ever had before.

Where is seed of *Doronicum Austriacum* to be had? I never can get any.—A SUBSCRIBER.

[You will have seen what was said last week relative to Strawberry culture.—ED.]

NOTES FROM THE CONTINENT—No. 25.

BRUSSELS.

FROM Cologne, through Aix-la-Chapelle (or, as it is called here, Aachen) to Brussels, is, in fine weather, a most delightful journey; the country passed over being a thickly-populated, mining, and manufacturing district, with fine scenery; but under the combined influence of a cold north-east wind, and a drizzling rain, it loses much of its interest, and I must confess, that I was by no means sorry when the journey was completed.

It was late at night when I reached Brussels; and, as my stay was to be very limited, I started early next morning for the Zoological Garden, combined with which is M. Linden's celebrated establishment. There is a small Botanic Garden in the town, but, from the reports I had heard of it, I was induced to visit the first-mentioned place in preference, and I was very glad afterwards that I did so.

The Zoological Garden is prettily laid out, and contains a good collection of animals (but cannot in this respect bear comparison with that of London). It is a favourite resort of the citizens, and a band of music performs there several times a week, besides the grand concerts on a Sunday. The price of admission is one franc (tenpence). The plant-houses are placed altogether in one part of the grounds, and are built upon the most approved principles. The Orchids, of which there is an admirable selection, occupy several of these houses; they were in the best of health, though, as might be anticipated, but few were in flower at the time of my visit. Among other inmates of the stoves, were many specimens of fine-foliaged plants, which are either new or rare. Most conspicuous among them were several species of *Theophrasta*, and the allied genus *Clavija*, the best being *T. imperialis*, *T. speciosa*, *T. macrophylla*, *T. Jussieu*, and *C. longifolia*. There is also another, of dwarfer habit, called *T. ocanensis*, or *minor*. In one of the smaller houses, I noticed a great number of seedlings of the Bread-fruit tree, *Artocarpus incisa*; a new kind of Alligator Pear, *Persea zitolensis*; and of the Milk-tree, *Galactodendron utile*, as well as a number of young Palms, and two new Cycadaceous plants—*Zamia Ghiesbreghtii* and *Z. Migueliana*.

I shall never forget the glorious display of foliage made in one of the cool-houses, by the various kinds of *Aralia*, *Didymopanax*, and *Oreopanax*. There were more than thirty species of these genera, and I tried hard to choose out a few which might be called the best, but utterly failed in it, for every plant was perfection in its own style. Some of them have drooping, lanceolate leaves, two feet or more in length, like *A. leptophylla* (or, as it was here called, *reticulata*); others palmate, like *A. Sieboldii*, and *O. Lindenii*; others, again, digitate, as *O. diversifolia*; while others have large ovate leaves, like *O. nymphæifolium*. These are often grown in stoves, but they do equally well, if not better, in a cool-house; in fact, they are just the thing to plant out permanently in a conservatory. On the front shelf of the same house, were a number of the pretty little, free-flowering, Melastomaceous plant, not unlike a *Centradenia* in habit, called *Monochætum ensiferum*.

There was an immense stock of the beautiful *Begonia Rex*, already described; the very pretty *B. rosacea*, and another called *B. lazuli*, in the way of *Xanthina*, with copper-coloured leaves, sprinkled over with pellucid dots, giving it, when seen sideways, a slight bluish tinge—hence the name. But decidedly the most beautiful of all the novelties this garden possesses, is the *Gesnera cinnabarina*. The plant is like the old *zebrina* in habit, but with more orange in the colour of the flowers. It varies greatly in the tint upon its velvety leaves, some being bright orange, others pink, and some deep vermilion. No person, therefore, should purchase this without selecting the plant for themselves.

I will briefly notice a few other plants which struck me as being new. *Tapina splendens*, like an *Episeea*, with bright scarlet flowers. A very brilliant *Æchmea*, called *spectabilis*, I believe. A new purple-veined species of *Cypripedium*, and the beautiful *Anæctochilus Eldorado*. *Spigelia aurea*, dwarf in growth, with white flowers, and brown and white leaves. A purple-leaved Composite, *Isotypus rosiflorus*. And among the Ferns, of which there was a good collection, was a new species of *Angiopteris*, with fronds much divided, and many others.—KARL.

EARLY SWARMS.

AS one of your correspondents is desirous of learning the periods at which early swarms of bees have occurred this year, and as I observe that the earliest you are aware of was on the 26th of May, I beg to state, that I have but three hives at my residence, in the neighbourhood of Reading, Berks, each of which produced a swarm in May,—two on the 13th, and one on the 29th.—M. H.

I HAD a swarm of bees on the 12th of May, and a second swarm from the same hive on the 23rd of May.—HENRY MOORE, *Stretford*.

QUERIES AND ANSWERS.

PLANT TO HIDE HOT-WATER PIPES.

“Do you know of any evergreen, climbing, compact-growing plant, suitable for covering the hot-water pipes in a conservatory? I have just had a small hothouse and conservatory built, one leading out of the other. It was intended for the hot-water pipes in the conservatory to be laid under the floor, and kept out of sight; but, from some mistake in the plan, this could not be done. So the pipes are carried round under the shelf, which, being narrow, leaves the pipes much exposed. In my opinion they are very unsightly, and, as they will only require to be occasionally heated in the winter, I thought they might be covered by some creeping plant. It must be of compact habit, so as not to interfere with walking round.”—A LADY SUBSCRIBER.

[If your conservatory was at all warm,—or you wanted to conceal the pipes in the hothouse,—nothing would be so compact and neat as the *Ficus stipulata*, made to run over a wooden trellis, though it would like a rough wall better. It will also do in the conservatory, but not grow so fast. It de-

lights in a mixture of loam peat and lime rubbish, but it is not at all particular as to soil, and requires but little. To produce a good effect, you had better plant every three or four feet apart. Some of the species of *Cissus*, such as *ant-arctica*, or *capensis*, would cover the space quicker. But they are more rambling, and we question if they would stand the heat of the pipes equally well.]

DRONE-KILLING IN JUNE.

"Can you account for bees at this season killing their drones? I have a strong stock, two years old, that showed every symptom of swarming during the last week in May, instead of which they commenced a wholesale slaughter of their drones about the 3d of June. The ground is strewn with dead drones, and the work of destruction is still going on."—A BEGINNER.

[There is nothing very remarkable in the destruction of the drones in your stock-hive, which merely proves that one queen only exists, and, consequently, that no swarming is now meditated by the family. The drones have, therefore, no office left to fulfil, and the bees have sagacity enough to see the inutility of continuing to maintain a race of idle consumers of wealth.]

BEES FORSAKING THEIR HIVE.

"On the 30th of May, at 'pudding-time,' a cry was raised, 'the bees are swarming.' As this was an event that had been anxiously looked for, the house was soon in a commotion, and the members of the household, emulating the bees, were rushing to and fro. The *pater* rushed out to observe, the *mater* seized a small bell, which some one had assured her was the *thing* to cause the bees to settle, and which, in spite of my superior knowledge, she would continue to tinkle; and my youngest hope was despatched, with hot haste, for our odd man, one cunning at hiving bees. Presently the swarm settles on a furze bush, on a bit of waste close by. In anticipation of this, I had made two boxes, on the Rev. C. White's, Mr. Taylor's, or Mr. Somebody Else's plan—whoever invented the collateral hive. Into the largest of these boxes, the man shakes the bees, to my mind (ignorant as I am) somewhat roughly. However, they appeared to take to the box quietly; and at *night* were put in the place of the stock, as advised by your 'COUNTRY CURATE,' the stock being removed to a stand close by. The advantage of this in increasing the numbers was very perceptible on the Monday, when a great number of bees were observed entering the hive, with yellow pellets on their thighs. During Monday, they appeared to have remained quiet, and I was boasting about the parish of the beautiful swarm I had got, and how well they were doing, and how much honey I should deprive them of shortly. 'Vanity of vanities!' I was at home on Tuesday, and early in the morning went to look at my swarm, and was sorry to find that many of the bees were idly hanging about the hive. At ten o'clock the air was again alive with bees; in a few minutes every bee had left the box: they settled this time on a small red cedar. As I had seen the mode of hiving, and my unfortunate man had one of his eyes closed, having been severely stung on the 30th, I decided upon hiving them myself. This I did quietly, and quickly putting them again into the box they had just left, again they seemed to take quietly to it. Again I was disappointed; for, between three and four o'clock, they all left the box, and settled on a furze bush in the adjoining waste. By this time, it began to dawn upon me that there might be something objectionable to the bees in the box, and I felt reluctantly obliged to hive them in the old-fashioned straw skep. This I did in the best manner I could; but, from the number of the bees and the awkwardness of the bush, I could not brush them all into the hive, and was obliged to shake a second lot into a *box*. These I turned down beside the others, and shortly had the pleasure of seeing the two lots amalgamate, and draw quietly into the straw hive. I now congratulated myself upon having saved my bees, and escaped without a wound. I regretted that I was obliged to leave home, and should not see the bees again for several days. Six o'clock came,—the time I was to leave,—when I went to take a last fond look at them. Imagine

my disgust at finding one of my Raspberry canes bent down, and kept on the ground, by a large cluster of bees: whether they came from the lot I had hived, or from either of my stocks (I have two), I have not the least idea. I had but time, as the lot was on the ground, to place the rejected box over them, and to leave word that when the man came he was to do the best he could.

When I saw them again, I was pleased to find, that the first, or large lot, had been put in its place, and that the second, or small lot, had been hived in the box, and that both seemed working and doing well. Now I want to know the cause of all this trouble, and why one lot of bees *would* remain in the *box*, and why one lot *would not*? Did the man, in shaking them roughly at first, kill the queen? If he did, why do they remain quiet, and appear to be busy working now? I am ignorant of, but partial to, bees, and wish to keep them on the depriving, or non-killing system. I read all your articles and a great many others, and, as far as theory goes, am pretty well up in the matter. I find, however, that theory is of very little value, when bees are obstinate, and will not be treated by rule of book. Guide me, if you can, for the future, and receive the thanks of your constant reader."—J. C.

[Your swarm evidently took a dislike to the box into which you first hived it, as a family amongst ourselves sometimes does, on unconsciously removing to a house with bad drainage, or other nuisance. Possibly the smell of paint, or of something else, was offensive; but, in these cases of desertion, it is generally unwise to persevere in the use of the same box, and you did right in changing the hive. It may possibly have happened that the box into which you hived the swarm was not sufficiently protected from the influence of the sun, and so led to the evacuation of a residence otherwise unobjectionable. It ought to be borne in mind, that all wooden hives require to be securely shaded, or the interior degree of heat sometimes becomes insupportable in such weather as we have of late been favoured with, when the combs fall down in consequence. The second swarm, to which you allude, had clearly no connection with the first, but must either have proceeded from your other stock, or from some neighbouring apiary. It appears that this colony was not as fastidious as the first one, and retained possession of the rejected domicile. Possibly the source of the mischief had been in some degree remedied, or the box been partially cleared of offensive matter by its temporary tenants. Your suggestion, as to the probable loss of the queen, is negatived by the fact of the bees being at work. You must not be disheartened, if the course of your apiarian affairs does not all times run quite as smooth as you could wish, and no book knowledge, however desirable, can meet every supposeable awkward case in practice.]

THE HISTORY AND LITERATURE OF BRITISH GARDENING.

BY THE EDITORS.

CHAP. I.

FROM THE ARRIVAL OF THE ROMANS UNTIL THE NORMAN
INVASION.

(B.C. 55—A.D. 1066.)

WHEN the conquering arms of Rome reached this almost Ultima Thule of their geography, they found the barbarous inhabitants existing chiefly upon the produce of their herds, and of the chase, although not totally inattentive to the cultivation of the soil. The inland inhabitants, descended from the Cimbri, lived in straw-thatched cottages, and knew nothing of husbandry; they tilled no ground, and sowed no corn, but subsisted for the most part on milk and flesh (*Cæs. Comm., lib. v., c. 14*). But those who dwelt near the coast, and particularly on that part of it now known as Kent, Essex, Suffolk, and Norfolk, were acquainted with the treasures of the soil. From their intercourse with the Belgæ, and the frequent visits of that people, either for trade or plunder, the natives of the coasts

seem to have early acquired a knowledge of husbandry. It is to this part of the island that Tacitus refers, when he says, "The soil is such, that, except the Olive and the Vine, and other vegetables usually raised in hotter climes, it readily bears all fruit and grain, and is very fertile. Vegetation there is rapid, but ripening is slow; and for both these effects there is the same cause—the excessive humidity of the soil and air" (*Vita Agric.*, c. xiv.). That it was only the inhabitants on the coast, and those who were either Belgæ, or descended from that nation, who cultivated the soil, is clear, from the statement of Strabo (*lib.* iv., c. 5), where he says, speaking of the aborigines of Britain, "They resemble the Gauls as to manners, if it is not that they are more barbarous, and less intelligent than the latter. There are some of them so ignorant, that, having milk, they do not know how to make cheese; and they are equally ignorant of the art of gardening, as well as of the other operations of agriculture."

The crops which would be grown by these early cultivators of the soil were, doubtless, the same as those which received the attention of the Gauls and Belgæ, from whom they learned the art of husbandry. The Carrot grows wild in Britain, as it does in France; from the latter it was imported into Italy, being only improved by cultivation; at least, such is the inference of the best critics upon this passage in Pliny:—"There is a fourth kind of Parsnip, by our people (the Romans) it is called *Gallica*, while the Greeks, who have distinguished four varieties of it, give it the name of *Daucus*." Unless it had been employed by the natives, we can scarcely conceive so useless a weed, as it is in a wild state, would have gained the attention of the Roman legionaries. Turnips were particularly abundant in Gaul; so extensively indeed were they cultivated as to be given to cattle. "Turnips," says Columella (*lib.* ii., c. 10), "are food not only for man, but for oxen also, especially in Gaul, where this kind of root affords nourishment for the cattle in winter."

We quote these facts, because the practices of the Gauls must have been known to the Cantii, or inhabitants of Kent, whom Cæsar especially describes as more advanced than the other Britons in the habits of civilised life, and as little differing from the people of Gaul.

We have, however, direct evidence of the similarity of their practices in cultivating the soil, in this notice of their use of marl as a fertiliser. Pliny says (*lib.* xvii., c. 4),—"It is only right that I should be rather exact in noticing this marl, which tends so greatly to enrich the soil of the Gallic provinces and the British Isles. Another kind is the white chalk, used for cleaning silver (modern whiting); it is taken from pits sunk a considerable depth in the ground; it is in Britain more particularly that this chalk is employed. The good effects of it are found to last full eighty years, and there is no instance known of a farmer putting it twice on the same land during his life."

If we turn to what we can glean, relative to one of the most important of our hardy fruits, we are justified in concluding, even from the etymology of its name, that it was cultivated by the Britons before the arrival of the Romans.

In the Welch, Cornish, Armorican, and Irish languages, or dialects, the Apple was denominated the *Avall* or *Aball*. In Welch, the wild Crab tree is still called *Afalwydden*, and in the Gaelic, *Abbol-fladhaich*. The Hedui, who dwelt in the modern Somersetshire, appear then, as now, particularly to have cultivated this fruit, and their town, which stood upon the site of the present Glastonbury, was known, when the Romans first visited it, by the name of Avallonia (Apple Orchard).—(*Richard of Cirencester*, *lib.* i., c. 6, s. 14).

We have seen how the inhabitants of Kent approached in their manners and practices their continental neighbours, and it is very improbable, that they did not thence derive any improved object of cultivation. Kent has immemorially been celebrated for its orchards, and we may conclude that these contained the Belgic varieties of the Apple. That the Belgæ had such varieties, we have the testimony of Pliny, who says (*Natural History*, *lib.* xv., c. 14), "The Spayed Apple (*Spadonium*) of the Belgæ is so nicknamed from its having no pips." Dalechamps thinks that this was one of the Apples still known in France as the *Passe Pomme*; but there is no sufficient reason for such an opinion; some of the varieties of Apples so called have an abundance of well-developed pips, and there are others in which they are few in number, but none are absolutely abortive. There are, however, Apples in which the seeds are wholly abortive, and without any core at all; but we would look with suspicion on any attempt to identify the fruits of the ancients with the varieties now in cultivation.

Other fruits, as the Pear, Damson, &c., being known by names evidently derived from the Roman appellations, we, on the other hand, are induced to consider as being introduced to the Britons from Italy. The same observation may apply to the Rose, and other inhabitants of the flower garden, of which there is little doubt the Britons were ignorant before their introduction by the Romans. The kitchen-garden is similarly indebted for most, though not all, of its inhabitants. The Cabbage, or Kale, tribe is an example of the exceptions. *Kavitch* is the name in the Cornish dialect, and *Cawl-wort* is mentioned in the oldest Anglo-Saxon MSS. They are names not derived from the Latin.

Of the Roman pleasure grounds, during the decline of the empire, we have the most ample accounts. Highly polished as were the citizens of the then Mistress of the World, it was in this department of horticulture their luxury and taste was displayed, and the most poetical subject here proffered itself to the pen of the historian and man of letters. To the Briton, just emerging from his barbarism, that which was most useful seemed most worthy of attention; hence, the fruit garden became his first particular care, and it is of this, in the earliest periods of which records exist, that we have the most particular, though, at the same time, scanty notice.

Tacitus, as already noticed, informs us that all fruit trees succeeded in Britain, except such as required a warmer climate. It is evident, from this cursory remark, that the Romans began immediately their endeavours to improve the place of their settlement, even before they had penetrated into the southern and more mild districts of the island; or before its climate could be ameliorated by the removal of exuberant forests, and accompanying marshes, the never-failing deteriorators of the climate of the country in which they abound. That they did begin improving their new settlement, is proved by the testimony of Pliny, who informs us that they introduced Cherries into our island B.C. 42. His words are:—"Cherries were not in Italy before the Mithridatic victory of L. Lucullus. He first brought them to Rome, out of Pontus, in the year (of the city) 680, and in 120 years they have crossed the ocean, until they have reached even Britain."

But although Britain was first visited by the Romans fifty-five years before the Christian era, and, although it is thus evident how much they were alive to the improvement of this, in common with all other nations, over which they had spread their conquering arms, yet it was not until the time of Agricola, A.D. 78, that the devastations and turmoils attendant upon a war of subjugation, had ceased so far as to enable them to win the attention of the natives, with success, to the

arts of peace. By the strenuous endeavours of that distinguished general, the natives were inspired with a love of the Roman language and acquirements, and when the legions were finally withdrawn from the Island, A.D. 426, the Britons were left comparatively a polished, but enervated people. The art of cultivating the ground was a principal object of improvement, and, during their possession of the island, became so extended, that not only were large quantities of corn annually exported from it, but, during the government of Agricola, he was enabled to augment the tribute which had formerly been imposed upon grain.

About A.D. 278, the Roman settlers, finding that some parts of the island were not unfit for vineyards, obtained permission of the Emperor Probus, to plant Vines, and make wine of their produce, a liberty which had been refused to them by the narrower-minded policy of his predecessor Domitian. Probus, also, to preserve his soldiers from the dangerous temptations of idleness, employed them in covering with vineyards the hills of Gaul and Pannonia; and two large districts are described, the digging and planting of which were by military labour. (*Vopiscus Hist. August.*, 240. *Eutropius*, ix. 17. *Aurel. Victor in Probi vita*. *Victor Junior*.)

From the remains of Roman villas, and other records of the state to which they had brought the arts of civilisation in this island, we have every reason to believe, although particular evidence is wanting, that gardening was likewise improved by them, so as to be in every respect similar to its practice in their mother country. The Britons amalgamated with the Roman settlers, who were very numerous. The veterans even, whether they received the reward of their services in land or money, usually settled with their families in the country where they had spent their youth; and in Britain, far removed from the influence of the tyranny and convulsions which shook the city, and their native land generally, there were many extra temptations to adopt this as their home.

The seeds of improvement having thus strongly germinated, no untoward circumstances were afterwards capable of entirely preventing their further growth; for though continually checked, yet, on a review of ages, the superior civilisation of any one over its immediate predecessor is always apparent.

Immediately after the departure of the Romans, viz., about A.D. 450, the Saxons formed a settlement in our island, and a series of civil wars succeeded, until the inhabitants pretty generally hailed Egbert, about A.D. 726, sole sovereign of the realm. Christianity being introduced in A.D. 507, this period may be reckoned as an epoch in the gardening annals of this country. Independent of the tendency it had to soften the manners of the people, and render them more domestic, it gave encouragement to the progress of the useful arts, and of these gardening was one of the most congenial; for it helped innocently to beguile otherwise unoccupied hours, and was the means of affording luxuries to the palate, which were by no means held in contempt by the monks and recluses of those times. These were persons of education when compared with the laity, and had an intercourse with foreign countries, through their brethren, which facilitated the communication of improvement; even their fasting from animal food was of benefit to horticulture, for it rendered them more desirous of superior vegetables, and condiments arising from their tribes. Thus, Italy, Spain, Germany, and France, countries always abounding in the ministers of religion, became distinguished for their culinary vegetables and fruits. It may be added, as another truly valuable advantage to horticulture, secured to it by religious establishments, that, whilst the country at large was devastated

by war, their property was usually held sacred; and, consequently, many varieties of vegetables were preserved, which, otherwise, would soon have become extinct, if cultivated only in less hallowed ground.

From the example of the ecclesiastics, the higher orders of the laity acquired a similarity of taste, and from these, again, the fondness for the products of the garden, and its improvements, extended in wider circles.

Gardens and orchards are mentioned, as being in the possession of the inhabitants of monasteries, and other religious establishments, in the oldest chartularies. Of orchards, many traces still remain. One in Icolmkill, or Iona, one of the Hebrides, is described by Dr. Walker (*Essays*, ii., p. 5), as having existed there probably from the sixth century. The Monastery of St. Columba was founded there, A.D. 566 (*Gibbon's History of Rome*, c. xxxvii.). Camden and Leland also mention various other instances in England. The Vine, we have seen, was introduced by the Romans, and was particularly admired, and attended to, by the carousing population of that age, if for no other of its qualities than the liquor yielded by its fruit. *Guinuydden*, *Guin-bren Guin-i-en*, or *Fion-ras*, its names in the Welch, Cornish, Armorican, and Irish dialects, is literally the wine tree. Vineyards were flourishing here at the commencement of the eighth century, as is testified by Bede (*Eccles. Hist.*, b. i., c. 1.); and, in the year 962, we find, in a deed giving lands near Southampton, from Edgar, "King of all Britain," to the Monastery of Abingdon, a clause stating, that the gift includes "a vineyard situated near Wæcet, together with the vine-dressers" (*vineam circa Wæcet sitam, cum vinitoribus*. *Historia Monasterii de Abingdon*, 321).

(To be continued.)

TO CORRESPONDENTS.

POISON FOR EARWIGS.—*J. H.* inquires for this aid in destroying earwigs. We shall be obliged by any reader furnishing information on the point.

CRICKETS (*A Constant Subscriber*).—Scotch snuff scattered about the place they infest will drive them away. Phials with a little beer in them, and placed in a slanting position, will trap them.

HAY FEVER (*A Subscriber*).—This periodical catarrh is, indeed, a great affliction. We have known those who found no relief but in remaining near the sea during the whole of June and July. We know of no effectual remedy, and we shall be much obliged by any one sending us information upon the subject.

NAMES OF PLANTS (*B. A. S.*).—We had this plant from "Z. A." (page 138), the specimen then sent being so much pressed, that even with much trouble it was impossible to make it out clearly. We could discern it was near to the *Mitella*, and, this being more like a fair specimen, we have no doubt about it. It is the *Tellima grandiflora* which is so nearly allied to the *Mitella*, as to have given it a mere transposition of the name. (*T. D.*).—Your specimens are very diminutive ones, too much so for examination, but the plants are as follows:—1. *Lychnis alpina*. 2. *Cerastium tomentosum*. 3. *Melittis grandiflora*. 4. *Coronilla emerus*. 5. *Ornithogalum umbellatum*. (*A. M. V.*).—The Fern is *Pteris serrulata*, a stove species; and the silvery-leaved plant is *Convolvulus encorum*, the Silvery-leaved Bind-weed. Most of our hardy Ferns delight in peat loam and a little leaf mould. This should be well worked up with the spade, from a foot to eighteen inches deep, and then no fear but the Ferns will do well under the shade of trees, if well watered when planted, if they should be dry at the time of planting. (*A. M. R.*).—Does your plant ever flower? If so, send us a flowering specimen, and we will inform you what it is; but from the sprig sent we are unable to name it. (*Alethea*).—Your Ferns are:—1. *Polystichum aculeatum*. 2. *Athyrium Filix femina*, in a slender form. 3. *Lastræa Filix-mas*.

STRAWBERRIES IN POTS (*Devoniensis*).—Without egotism, we believe that the directions given in this work are second to none. A few weeks ago, minutiae were given, which would meet your case. We have grown in large pots, and in boxes large and small; but for profit we prefer smallish pots, not much more than half the size you use. We shall be very glad if you succeed thoroughly with them. In the latitude of Plymouth, we would also prefer young plants to old ones. But, supposing we were to use again these old strong plants of yours, we would place them against a north wall or fence, until the first or second week in July, and just given them enough of water to keep them from flagging. We would then bring them into the sun and water them, and in the course of a week would repot them into similar-sized pots, after gently getting rid, by means of a pointed stick, &c., of fully one-half of the old soil. Treat them as recommended a few weeks ago. If you were to keep the pots in the sun all the summer, and

water richly and fully, there would be danger of getting your flower-trusses up late in autumn.

WOODLICE (*E. T. A.*).—The remedy has been often given. They like concealment—make that the lure to their destruction. Lay down, where they much frequent, some little heaps of fine dry hay. Visit these early in the morning, and scatter boiling water over them as you move the hay. You may see myriads in one place at times, especially if the ground around has been wetted. Sink bellglasses where they are numerous, baited with bits of Lettuce, Carrots, and crumbs of bread. They go in to feed and cannot crawl up the glass again. We have thus taken a quart of them in a morning. All old gardens are generally infested with them, and if they cannot be eradicated they must be kept down.

FUCHSIA BUDS, FALLING (*F. F.*).—As you give plenty of fresh air, and we presume the plant is not sun-scorchd, we can only come to the conclusion, that your plants are frequently allowed to become too dry. That will tell much sooner upon buds than even upon leaves; but if the leaves have flagged at times, then we would be sure that was the reason. We have noticed the same thing produced by keeping the plant standing in a large saucer full of water. The Fuchsia is not an aquatic. It must have abundance of water when flowering and growing, but the water must not be stagnant, nor the drainage defective.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. *Sec.*, Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. *Sec.*, Mr. James Beesley. Entries close June 26.

JULY 15th. YORK. *Sec.*, Mr. R. Smith, cutler, 10, High Ousegate, York. Entries close July 7th.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. *Sec.*, W. Houghton.

AUGUST 18th. AIREDALE. *Hon. Secs.*, J. Wilkinson and T. Booth, Shipley.

AUGUST 28th. HALIFAX AND CALDER VALE. *Sec.*, Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.

OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

BEVERLEY POULTRY ASSOCIATION.

THE first Meeting of this Society, just concluded, proved itself highly creditable to its projectors; indeed, we can scarcely call to mind any "first attempt" at establishing an annual Poultry Show that has been carried out so successfully. The entries were over 700 pens, and the poultry competing was of the highest character. The amount required to enter fowls for competition, being far less than ordinary, most probably tended to this favourable issue, and the care and attention paid to them, was all that could be desired.

The Show was held in the Public Assembly Rooms, at Beverley, and the pens were those publicly offered for hire by Mr. James Turner, of the Wire-works, Sheffield. In reference to these pens (which are well-galvanized), there is but one failing, obvious at first sight to those generally experienced in these matters: they are too low. Consequently, the larger varieties, as Dorkings, Malays, Game, &c., are prone, under the excitement consequent on confinement, to break their tails irremediably, until the annual moult restores the damaged plumage altogether.

The rooms were somewhat tastefully ornamented with evergreens and a fountain; whilst the unlooked-for addition of a selection of preserved birds, in cases, added to the originality of the whole proceeding. Banners were also general, among which, we particularly noticed the following mottoes:—"Unity, enterprise, and perseverance, bring success;" also a larger one, bearing the words—"High and Low, Rich and Poor, one with another." This proved itself prophetic, for the attendance of all classes caused the rooms to be constantly crowded.

Spanish headed the list, and were good, though some sadly wanting in condition; pen five, the property of T. T. Pierson, Esq., M.D., of Bridlington Quay, was decidedly one of the best pens we ever remember seeing anywhere. The Grey Dorkings

were very respectable specimens, but not a few of them bore the most unmistakeable proofs of want of condition, from too frequent exhibition. The *Cochins* contained many good specimens, but that certain disqualification of "pea-combs" was somewhat general, a failing, too, that heretofore we never met with, save in isolated birds. The *Game* left but very little room for improvement. The *Hamburghs*, for Yorkshire, were indifferent, whilst some of the *Silver Polish* were most commendable. The extra class was a goodly array of *Black Hamburghs*, *Silkeys*, *Frizzled*, and *Sultan* fowls. The class for *Farm-yard Fowls* was a failure. *Bantams* were numerous, and stood out conspicuously as public favourites. The *Single Cock* classes were very superior.

In the *Turkeys*, the Americans took first prize, they were in wonderful good plumage, and were closely run by the second-prize birds (Black Norfolks), the property of the same proprietor.

The *Rouen Ducks* were very bad, but the *Geese*, and *Aylesbury Ducks*, made ample amends by well-filled classes, combined with excellent quality. The *Malays* were numerous, and one of the best quality, as a class, we can call to recollection.

The visitors from a distance were far greater than usual on such occasions, each successive train bringing loads of holiday seekers, the majority of whom expressed themselves highly pleased with the treat afforded them. The rooms, from the great company assembled, became somewhat hotter than comfortable, and not a few availed themselves of a ramble through "the bushes," for which Beverley is so renowned. This rural spot embraces some twenty or thirty acres of undulating ground, studded with groups of Hawthorn bushes, both white and red, many hundreds in number, whilst the girth of most of them would exceed that of the human body. They were all in the height of bloom, mostly "white as sheets," although not a few brilliant red ones, diversified the view, whilst equally adding to the general perfume.

Hundreds of visitors finished the day's pleasure by a walk to this public promenade, whilst a fair proportion, forgetting time will progress, even when unheeded, found to their dismay, on their return to the railway station, that the train was long since gone. The hotel-keepers were, consequently, unusually busy.

The poultry awards were efficiently made by Mr. Edward Hewitt, of Eden Cottage, Spark Brook, Birmingham, whilst Messrs. Child and Smith fulfilled similar duties as to the Rabbits, Pigeons, and Canaries. As before stated, this Show passed off exceedingly well; and another year it is the intention of the Committee, to have the premiums greatly increased in value and general importance.

Last week we published the list of awards in the Poultry classes. We now publish those in the Rabbit, Pigeon, and Canary classes.

PIGEONS.—*Carriers.*—First, F. J. Yates, Beverley (Dun). Second, F. J. Yates, Beverley. *Pouters.*—First, S. Robson, Poeklington. Second, E. Carrington, Beverley. *Almond Tumblers.*—Second, F. J. Yates, Beverley. (First withheld.) *Short-faced Tumblers.*—First, D. B. Turner, Hull. Second, F. J. Yates, Beverley. *Tumblers* (Any other variety).—First, J. W. Edge, Ashton New Town, Birmingham. Second, F. J. Yates, Beverley. *Barbs.*—Prize, J. Potts, Beverley. *Jacobins.*—First, J. Turner, Beverley (White). Second, J. W. Edge, Ashton New Town, Birmingham. *Trumpeters.*—First, R. Smith, Hunmanby. Second, G. Winter, New Village, Hull. *Owls.*—First, J. Potts, Beverley. Second, D. B. Turner, Hull. *Turbits.*—First, J. Turner, Beverley. Second, G. Winter, New Village, Hull. *Fantails.*—First, S. Robson, Poeklington. Second, W. Abbott, Beverley. Commended, C. R. Titterton Birmingham. *Any other variety.*—First, D. Laybourne, Beverley (Runts). Second, C. R. Titterton, Birmingham (Runts). Highly Commended, E. Bebbington, Minshall Vernon, Cheshire (White Dragoons); S. Robson, Poeklington (Dragoons). Commended, G. Winter, Hull (Runts).

RABBITS.—*Longest-eared Rabbit.*—First, C. R. Titterton, Birmingham. Second, T. Rousby, Hull (Yellow and White Doe). *Best Buck.*—First, D. Northeott, Bristol. Second, T. Rousby, Hull. Highly Commended, T. Rousby, Hull; E. Carrington, Beverley. Commended, J. Monkman, Beverley. (An excellent class.) *Best Doe.*—First and Second, T. Rousby, Hull. Commended, E. Carrington, Beverley. *Heaviest Rabbit, of any Variety or Cross.*—First, G. Torrs, Birmingham. Second, J. Leason, Driffield.

SPECIAL PRIZES.

Best Canary Cock.—Prize, T. Bielby, Beverley. Highly Commended, J. Campey, Beverley. Commended, J. Holmes, Beverley; E. Hardy, Beverley. *Best Canary Hen.*—Prize, W. Campey, Beverley. Highly Commended, G. W. Duffield, Beverley. Commended, T. Bielby, Beverley. *Best Mule Bird.*—Prize, J. Widdall, Beverley. Commended, E. Smith, Beverley; C. Browsho, Beverley. *Best Four*

Young Canaries.—First, D. Robinson, Beverley. Second, G. W. Duffield, Beverley.

PIGEONS.—Piece of Plate, C. R. Titterton, Birmingham. Highly Commended, J. Turner, Beverley.

ESSEX AGRICULTURAL SOCIETY'S POULTRY SHOW.

REMEMBERING the success of the Royal Agricultural Society's meeting at Chelmsford two years since, the good people of Essex have formed an Agricultural Society of their own, and last week held their first meeting. It must have been very gratifying to the Committee and Stewards to see their exertions so well rewarded by crowded entries, and a very large attendance of visitors.

Chelmsford was the town selected by them for their first meeting, and the competition confined to the county.

With the cattle we have nothing to do; but we may be allowed to say, that the horses and bulls were of great excellence, and mustered in large numbers.

The poultry were sheltered from the intense heat of the sun by a large marquee. The Dorkings and Game were the favourites. The first prize for *Dorkings* went to Mrs. Pattison, of Maldon; the second, and the prize for the best cock, were taken by Mr. Fisher Hobbs. The bird shown for the latter prize was one of the handsomest and best-shaped birds it has been our lot to see for a long time. The third prize was awarded to M. F. Formby, Esq. The *Spanish* were not numerous, nor were they so fine as might be expected. Mr. H. F. Wells took first, Mr. Formby second, and Mrs. Pattison third prizes. The *Cochins* were confined to Buffs; and here Mr. Wells again took first; the second prize was taken by Mr. Sturgeon. The two hens shown by this gentleman were of great beauty and size, but the cock bird was not equal to them. The class for *Game* was well filled: the first prize was taken by a pen of very good Black-reds, belonging to Messrs. Woodward and Waller; the second and third went to Mr. R. Joeelyn. The next class was one that is never a favourite with the Judges: it was for *Any other breed*. The first prize was taken by a pen of *Golden-spangled Hamburgs*, belonging to Mrs. Pattison; the second by a pen of *Silky Fowls*, the property of Mr. W. Graves; the third by Mrs. Pattison, for a pen of *Golden-pencilled Hamburgs*. The *Polands* were not good, nor were the *Silver-pencilled Hamburgs*. The *Bantam* tribes were represented by some Black ones, but not of any merit.

The *Rouen Ducks* were not good. The first prize for *Aylesburys* was taken by Mr. Fisher Hobbs, with a pen of splendid birds; the second prize went to Mr. Boghurst. There were some fine young *Ducklings*, but they were shown six in a pen, instead of three; they were highly commended.

The first prize for *Turkeys* was taken by Mr. Tuek, with a pen of birds of great size; the second went to Mr. W. P. Boghurst.

The meeting must be called a most satisfactory one, and well worthy the care and pains bestowed on it. The pens were those of Mr. Cook, of Colchester. Mr. Warwick, the compiler of the "Poultry Diary," was the Steward for the feathered department, and his arrangements were good: we believe all the birds were sent home the night of the Show. Mr. John Baily, of London, was the Judge.

In conclusion, we wish the Essex Agricultural Association every success, and are glad to find them making poultry a part of their exhibition. The crowded marquee must have told the Committee that it was not the least popular part of the meeting.

PREVENTION AND CURE OF GAPES.

HAVING observed in your paper, at page 154, a remedy prescribed for gapes in chickens, signed "J. DOUGLAS," I beg to send you one, more simple in its nature, and most valuable in its results. A lady, with whom I am intimate, and who has great fondness for poultry, has found tar water an unfailing cure and preventive of gapes. She mixes a lump of tar in clean water, stirs it well, lets it settle, and then pours off the clear water for the use of her poultry. If they are affected, it restores them, and entirely prevents the disease in others.

"Jane Steady," who may be known by name to some of my readers, has cured a chicken in the last stage, by giving it a little pill of tar; and my friend, who first named the remedy, cured a whole brood of sick chickens, in a hopeless condition, by the strong tar water alone. It is so very simple and easy, for those who cannot obtain chemical requisites, that it is worth attending to, and proving; and, I trust, it may be of use to many of your readers.

While chickens are liable to the disease, tar water should be placed for them instead of pure water; they will drink it without difficulty. I should be glad to know the results.—THE AUTHORESS OF "MY FLOWERS."

THE BRONZED-WINGED AUSTRALIAN DOVE.

I PERCEIVE there has been much difference of opinion as to whether the Australian Bronzed-winged Dove will breed in confinement. That it will do so I have had ocular proof. A gentleman, now deceased, who resided near my house, brought with him, from Australia, a pair of old birds; they, at the onset, appeared very wild, and thoroughly unsociable, either with pigeons or poultry. They were afterwards placed in a rather secluded pheasantry by themselves, where they immediately bred very freely; and the young ones thus raised subsequently nested, and produced their young repeatedly in the same aviary; all the birds agreeing more generally than with common pigeons.

I attribute this success to the quiet they there enjoyed more than to any other advantage; for a pair of English-bred ones, taken from the aviary just named, although they had previously nested, never showed any after-tendency to do so, when removed to very excellent and extensive new quarters, but where they were continually under the inspection of the family.—EDWARD HEWITT, *Eden Cottage, Birmingham*.

SPANISH HENS BROODY.

I HAVE kept Spanish fowls for several years, and, until this season, never saw any of them inclined to sit; but two of my best hens have lately shown a determination to sit, and have gone about like ordinary brood hens. Is this common with Spanish? or is it any indication of the breed not being pure?

I have, also, a pure-bred *Golden-spangled Hamburg* in the same position; indeed, she is at present sitting closely upon eggs.—L.

EGGS HATCHED AFTER LONG CONVEYANCE BY RAILWAY.—I received a sitting of thirteen eggs, of Silver-spangled Hamburgs, from Mr. G. Chadwin, of Salisbury, and, after travelling 530 miles by railway, they produced nine chickens. I think this deserves a notice.—ALEX. RENNY, *Paisley*.

OUR LETTER BOX.

COCHINS LONG BROODY (C).—It is not unusual for them to remain broody for two months. We do not allow them so long a rest. After letting the hen sit for three weeks, we take her off the nest, put her under a coop in a distant part of the premises, and keep her there for a week on low diet and plenty of green food. This usually removes the broodiness; but if not we keep under the coop another week.

LONDON MARKETS.—JUNE 21st.

POULTRY.

The continuance of the unusually hot weather renders anything like a quotation impossible, seeing that the prices are more influenced by the weather than the supply. Much of the poultry arrives in a state unfit for food.

	Each.		Each.
Large Fowls ...	6s. 6d. to 7s. 6d.	Pigeons	0s. 8d. to 0s. 9d.
Small ditto.....	4 6 „ 5 6	Guinea Fowls.	0 0 „ 0 0
Chickens.....	3 0 „ 4 0	Leverets.....	2 6 „ 4 6
Geese	4 6 „ 5 6	Rabbits	1 5 „ 1 6
Ducklings	2 6 „ 4 6	Wild ditto.....	0 9 „ 0 10

WEEKLY CALENDAR.

Day of Mth	Day of Week.	JUNE 29—JULY 5, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
29	TU	ST. PETER.	29.718—29.589	75—54	S.W.	.01	47 af 3	19 af 8	27 af 11	18	3 2	180
30	W	Bossia scolopendrium.	20.610—29.526	74—47	S.W.	.02	48 3	18 8	40 11	19	3 14	181
1	TH	Abronia mellifera.	29.941—29.690	74—50	N.E.	.04	48 3	18 8	52 10	20	3 26	182
2	F	Abronia pulchella.	30.012—29.991	71—45	N.	—	49 3	18 8	4 11	21	3 37	183
3	S	Abutilon striatum.	30.012—29.972	70—55	S.W.	.10	50 3	17 8	15 11	22	3 48	184
4	SUN	5 SUNDAY AFTER TRINITY.	29.850—29.809	67—55	S.W.	.11	51 3	17 8	28 11	23	3 59	185
5	M	Acmadenia tetragonia.	29.815—29.622	70—56	S.W.	.03	52 3	17 8	42 11	24	4 10	186

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 74.3° and 51.2°, respectively. The greatest heat, 91°, occurred on the 3rd, in 1826; and the lowest cold, 35°, on the 30th, in 1849. During the period 140 days were fine, and on 77 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

In this department, the principal work will consist in planting-out, as showery weather and vacant ground occur, the main supply of autumn, winter, and spring vegetables.

BEEF.—Thin, and clear from weeds.

BROAD BEANS.—Sow a few *Mazagans*, with the hope, if the weather proves favourable in the autumn, of producing a late crop. The tropical weather that we had lately was sure to abridge the supply very generally.

BROCCOLI.—Plant out where the Peas, on account of the weather, have prematurely done bearing, and have been removed, or on any other open piece of ground. They will require a liberal supply of water, if the weather continues dry.

BRUSSELS SPROUTS.—Plant a good breadth in showery weather. It is a most productive and delicious vegetable.

CABBAGE.—Sow a little more seed immediately, if the sowing we recommended last month failed.

CARROTS.—Thin the main crop.

CUCUMBERS.—Sow seed, or put in a few cuttings, to plant out for a succession till Christmas. Continue to give a liberal supply of water to the plants in frames, twice a week, and sprinkle over the leaves every afternoon.

ENDIVE.—Sow, and continue to plant out a few every week, to keep up a succession.

KIDNEY BEANS (DWARF).—Sow the last main crop. Water liberally, and earth-up the advancing crops.

ONIONS.—Sow, to draw young. If any of the main crop remain too thick, thin them to a proper distance.

PARSLEY.—Sow, for a strong winter supply.

PARSNIPS.—If any have been allowed to remain too close, they should now receive their final thinning.

PEAS.—Sow. As the summer supply will be very scanty, a greater breadth than is usually given may be recommended, with the hope of a favourable produce in the autumn. Water abundantly; earth-up, and stick, the advancing crops.

RADISHES.—Sow the *Turnip-rooted* in a rather shady situation.

SAVOYS.—Continue to plant out in showery weather.

TURNIPS.—Hoe; and thin advancing crops to six or eight inches apart.

VEGETABLE MARROW.—Stop the main shoots, and give them a good soaking of water occasionally, during the continuance of dry weather.

FRUIT GARDEN.

When curled foliage appears on Apple, and other fruit trees, from being infested with green fly, it should be cut off, and crushed, or burned, and the engine, or syringe, worked, to cleanse them in the evening.

WALL TREES.—Where attention had been given, as recommended, to their early disbudding and pruning,

there will be but very few, if any, improper and superfluous shoots to be removed at this time; the principal business will be to fasten-in the retained regular shoots to the walls, &c., according as they advance in growth, and to cut out useless after-shoots. But, where such attention had been neglected, the confusion amongst the shoots must now be regulated, retaining the well-placed shoots at their full length, nailing them regularly to the wall, and cutting out the superfluous, such as the foreright and other ill-placed shoots.

FLOWER GARDEN.

All vacancies, made by taking up *Anemones*, *Tulips*, *Hyacinths*, &c., to be filled with bedding-out plants, from the stock in reserve.

AMERICAN PLANTS, such as *Rhododendrons*, *Azaleas*, &c., will be much benefited by a good soaking of water, and then being mulched, to assist in keeping the roots moist during their growing season. Now is a good time for layering them, if wanted for an increase.

ANNUALS.—Late-sown to be thinned out as soon as they are well above ground, to allow them sufficient space to grow strong from the first.

BASKETS and VASES.—Stir the surface of the soil, and cover the spaces between the plants with moss, to prevent evaporation; and pay particular attention to watering,—as *Fuchsias*, and many other plants, soon suffer if not nourished with a daily supply.

CARNATIONS and PICOTEES.—Occasional waterings with weak liquid manure will invigorate them. Some of the most forward may now be layered. Continue the directions as to tying, &c., as given last week.

CHRYSANTHEMUMS.—Put in cuttings, and plant out the most forward, eighteen inches apart, in the open ground; to be stopped frequently, until the middle of August, and watered occasionally until October, when they will be fine bushy plants, to put into pots for the greenhouse. When taken up, and potted, in dull weather, they will not lose a leaf; and all who have grown them in pots will be spared the incessant labour, as they know, of watering them.

HEDGES.—*Quick* and *Privet*, *Hornbeam* and *Beech*, to be closely cut-in with the shears; but *Laurel*, and other large-leaved trees, will look best when the young wood is cut back with a knife, as the shears in some measure affects the beauty of the leaves by cutting them.

PINKS.—Continue to put in pipings and layers. Select and fertilise a few of the best sorts for seed.

ROSES, CHINA and TEA.—Propagate by cuttings, selecting wood of the present year, to be struck under handglasses. Bud all varieties as soon as the bark rises freely.

WILLIAM KEANE.

A WARNING ABOUT BEDDING PLANTS.

BEDDING plants ought not to be shown at public exhibitions, but as bedding plants; otherwise the good intention of teaching the public which are the best

bedders, as the "seedlings come out," is turned right round, and a mischievous cloak is given to ignorance, or to ignorant people, and to people who are not at all ignorant, but take this very cloak, and under its ample folds will cheat and chisel every mortal being who deals with them; and, last of all, they are on the broad way to perdition, and the flower shows are some of the gradients which accelerate their final doom.

Bedding plants *are* bedding plants, and when a man or woman plants them out they are done with, as far as the art of cultivation is concerned; and, before they are planted out, the great art and mystery of their management, is to keep them, as much as possible, from all the influences which govern that same art of cultivation. Why then give prizes for bedding plants, under the stimulus of good cultivation? Why, indeed? But that is the question; the answer to it is this:—So many people go the wrong way to work, that the rest cannot help themselves, till time, which reveals most things, shows clearly enough, that these people began at the wrong end of the book, reading backwards, till they came to the preface and dedication, and then found out what the book was all about. Doctor Lindley grafted the wrong end of this stock, certainly, in the Chiswick Garden. I began to read his book, on "Prizes for Bedding Plants," at *finis*, and read on for twelve or fourteen years; I only got to the preface this hot summer, and then I could see what it was all about. In the first place, it was not worth a single straw for the improvement of our art; and, in the second place, it could not, and never did advance, or improve, the looks or character of a single flower-bed; and for this reason, that beds are never filled with "specimen" plants, or plants which went through the regular stages of cultivation, such as is given to specimen plants, or exhibition plants; and, thirdly, and worse than all, this stimulating degree of cultivation, which is never required in practice, and is not an improvement on the flower-bed, has enabled the ignorant and the cheat to defraud the public alike. But it must not be so; your clever fool who believes his own eyes, thinks that, because he has spent a great deal of time and ingenuity, to bring a new Verbena, or any other bedding plant to a fine state of bloom, it is really a first-rate thing for a bed, and sells it as such, and next season it may turn out to be fit for nothing. Then comes the cheat, the rogue, and the actual swindler, with their batches of seedlings,—not worth a penny the thousand, but add a little more to the cost of rearing them,—who grow them well, exhibit the good growth, get a name, advertise, and shame the devil for brass and impudence. And we have to account for all this wickedness, disappointment, and bad luck, by paying "the little more" in the shape of prize money. Therefore, no prize should ever be given to any kind of bedding plant, in respect to the degree of cultivation which may have been bestowed upon it, beyond what is requisite to make it fit for the bed at the fitting time.

The true way to encourage the style and improvement of bedding plants, as I have just found out, on reading back to the preface to the worthy Doctor's book of prizes, is to give the prizes to the beds instead of to individual plants. But who could bring flower-beds to a show? The man is daft, the hot weather has done it all, and he is crazy. But in the olden times, you could not get at the truth, but through the "daft body," the family fool; and there is no more trouble in bringing all your beds to the shows than there is bringing up your drawing-rooms, conservatories, show-houses, pits, frames, and forcing-houses; and every one of these structures, are now being represented at every one of the shows round London. A full-grown *Wellingtonia* could not be taken to a show, nor yet a

Ribston Pippin tree in good bearing; but perfect specimens of each, that is, a specimen of the thing for which we grow such plants, can easily be exhibited, and answer all the purposes for which we intend prizes. A specimen of the best circular bed may be given in a vase. Another specimen of your choicest oblong bed is the plant box on the window-sill;—artificers will make any form of bed into a comfortable size for travelling;—then plant your new bedding plants in these cases, as you now do in pots, turn out such cases at the end of May, and do nothing more to the plants than what they would need in a bed, to keep it tidy and in good health and bloom. Then, and not till then, will the true character of bedding plants, and plant-men in that line, be made known at the shows, and dealt with accordingly.

Scarlet Geraniums, of all other plants, are the worst to be met with at the shows, because they are seen under a false system, under pot culture, as compared in our mind, against bedding growth. I never yet saw a full satisfactory plant of any of the Scarlet race at an exhibition. The best I saw were some *Tom Thumbs*, which Mr. Edwards, the great florist, exhibited at the Regent's Park, some five or six years back; but, by growing these Scarlets in very rich soil, by training, and by all the indulgences known to the specimen cultivator, a poor, flappy, and good-for-nothing kind, may be made to look as well as the best of them, for a few days or weeks, so as to pass for a first-rate thing from the last May show to the first show in July; and, by getting a name, is ready to be palmed on the public as a substantial bedding kind.

But, of all the modes, that of exhibiting cut flowers of bedding plants is the most to be dreaded. Never allow your better judgment to buy a bedding plant from seeing cut flowers of it only, because that is, of all kinds of deception, the greatest, without even any intention of deceiving. They put up half-a-dozen heads of one kind of Verbena into one truss. People, who would not eat fat pork, will buy these Verbenas, because they, the Verbenas, look as rich and fat as streaky bacon, and as tempting to the sight. And, lastly, the most awful style of cheating with bedding plants, is that by which they are sold in "collections." If the seller has a spark of the old Adam about him, here is just where it is most likely to get into a blaze. He, the all but honest man, has two good seedlings, out of 2000 bad ones; and the public is so stingy, that he cannot repay half his expenses by all he could get for his stock of the two good kinds. Then the author of all evil suggests to him the numbers of mankind who like fat pork, without knowing it,—great bargains will catch any one of that number: put up ten of your bad ones, any ten will do, with each pair of your good ones, call the lot a "collection," give it cheap, and you may net more than will fill your boat.

The best men of the day deal in these collections, because they cannot help doing so; it is the fashion; and the fashion began, like prizes for the best-grown bedding plants, with the best intentions. The continental florists began it first; they found out that not more than a tenth part of their seedlings were valued here, and that not so many of our best seedlings suited the foreign taste; so they put them in the lump, trusting that so many of them would "take" here, and pay for the rest. But their troubles and ours began from that time. Mr. A., in London, orders a "collection" of Mr. B., in Paris, and, after propagating scores of each kind, finds that not more than a tithe of them is suited to his customers. B. goes through the same routine, and ends with a similar disappointment. Both grumble, and both go at it again and again, and grumble as loud as ever; and rascality

comes in, on both sides of the channel, to reap a share of the game without incurring the cost. Nurserymen who have been forced into plying this game have told me over and over again, to raise the hammer against it. But I merely mention it to-day, and at this season, while it may be fresh in the recollection of those of my readers who played a stake this season for their flower-beds.

D. BEATON.

HOW IS A TENDENCY TO BLOSSOM PROMOTED AND RETARDED?

THIS is a question which has seldom been mooted in the present form; and, although it is a somewhat difficult theme to handle, I shrink not from the task. I well know that the subject may, by some, be considered a dry one: doubtless it is; but we have readers who esteem these hard crusts. But, in truth, it is a matter which has a broader bearing than many might, at first sight, imagine; and I feel, before I commence, that more than one paper may be employed in endeavouring to throw light on this somewhat intricate subject. Why vegetables "bolt;" to use a technical phrase,—in other words, blossom before they are expected; why flowering, or ornamental plants are made to blossom in profusion by one man, whilst by another they are termed difficult; why some trees fruit, and others, apparently under similar conditions, are barren; and, to close, why some shrubs flower and others do not;—these are questions which may not be disposed of in a flippant way. Such is the position of this question: and here I must confess to the recklessness or bewilderment of that honest and free-hearted Hibernian, who, when asked where he was going, said he did not know until he got there.

The subjects of the vegetable kingdom may be thus grouped for practical purposes:—vegetables, flowers, fruits, shrubs. Trees we will leave to the forester.

VEGETABLES.—I need not run over the whole range of our culinary vegetables. I, therefore, must typify them by such things as Celery, Lettuce, Cabbage, Cauliflower, and Spinach. A discussion concerning these will at once throw light on the rest. I take them in order. *Celery* sometimes "bolts." What is the predisposing cause? If anyone was to ask me, what would be the readiest mode of compelling the young Celery plants to "run,"—that is, to blossom,—I should answer, "Sow them early; transplant them in very rich soil, and let them stand thus before being finally planted, until they are nine inches in height;"—such will be sure to "run" betimes, in the autumn or winter. *Lettuces* that endure the winter, commonly called early spring Lettuces, are notorious for being a long time in use without advancing to the blossom state; and why? Simply through the comparative absence of those exciting causes which cause plants to assume the blossoming condition. But Lettuces sown in May, on rich soil, and transplanted when stout plants, will, in general, "run" before they make good hearts. The only way to obtain good-hearted Lettuce in the heat of summer is to sow them in drills, on the richest soil in the garden,—if loamy so much the better. Here they may be thinned out to the proper distance, and, with waterings when necessary, they will produce heads as fine as in spring. The Lettuces are a short-lived race, and any check after rapid growth, during the exciting heats of summer, will be sure to induce this blossoming habit. In the cool of autumn, and early spring, they bear transplanting well; for that kind of elaboration which tends gradually to the production of blossoms goes on very slowly, the exciting causes of heat and light being at a low point.

And now we come to the *Cabbage*. These are not so notorious for bolting as some other vegetables, and their tendency to run to blossom is at all times increased by any spurious mixture in their blood. How this occurs is not particularly plain, but certain it is, that they are more excitable when such is the case. But the true Cabbages, sown at particular periods, are unsafe in this respect. Let anyone sow his best kind in the last week of July, and the probability is, that they will all, or many of them, bolt in the succeeding April. The fact is, that they grow with too much rapidity in the month of September;—too fast to form a heart in that young state;—and, being transplanted, which they must be, at the end of that month, they receive a sudden check on the heels of grossness, and this check at once lays the foundation for the blossoming principle. But how different the result, if the Cabbage be sown in the middle of August,—only three weeks later. By the period the young plants are up,—say, the early part of September,—the summer heat has declined; consequently, the plants grow more steadily, and are shorter jointed; and, the over-exciting causes being reduced to a fair equilibrium, the whole tendency of the plant is to produce what is termed heart, and a good Cabbage is the result.

In passing on to *Cauliflowers*, I may observe, that these are liable to "button," a technical phrase; and, I beg it to be understood, that I am by no means the inventor of this term. It has been used by our great grandsires, and, still being accepted by practical persons, I do not feel myself in a position to coin new terms. I will, however, endeavour to show that science itself recognises the facts connected with it, although she employs another kind of phraseology to express it. The term buttoning signifies forming a blossom-bud, or tiny head, whilst the plant is young. One man sows Cauliflower seed, genuine, in the third week of August, in order to produce early spring Cauliflowers in May and June. He sows them on rich soil, and transplants them—what he calls strong fine plants—in October, in frames or glasses, providing again very rich soil for them; for all the world, says he, knows that the Cauliflower requires a generous soil. But, how puzzled may this man be, to find in March, or April, that out of a dozen handglasses, containing half a hundred permanent plants, he will not have much more than a score of Cauliflowers after all his pains.

Another man will sow his Cauliflowers at the same time, on poor soil, or one of a moderate character, and transplant them on similar soil, and not one will button; yet they were from the same samples of seed. Here, then, is another case in point. The fact is, that if Cauliflowers, like Celery, are once allowed to become gross, in the seed-bed, or where they are transplanted, and are removed afterwards, they are sure to possess a tendency to button.

Spinach is another susceptible vegetable in this way, and the last I shall name in this section. This plant is very much excited by heat alone, irrespective of rich soils. Indeed, in this case at certain seasons, rich soils are averse to that speedy bolting, or running to blossom. Spinach sown in August stands the winter; and, be it ever so strong, it scarcely makes an effort to run to blossom until April or May. But the same kind, sown in the first week of June, will produce a very different plant. The former, stout, robust, and exceedingly prolific of foliage, also averse to a blossoming tendency; the latter, just producing a few leaves, with a highly attenuated stem, and rushing forward to blossom with celerity. This plant is, perhaps, one of the best we possess, for exhibiting to a student the influences of those laws which govern the vegetable kingdom, by presenting to him, in their extreme

effects, a first proof, or sound and lasting impression. Spinach happens to be extremely excitable, more so than most of our ordinary vegetables. Heat is the most exciting cause, and this, combined with much solar light, is doubly influential, as to the blossoming tendency. Thus, good gardeners sow their summer Spinach in shady situations, and on rich soil, in order that the growth may be as slow as possible in the plant, whilst the root is supplied with all the accessories to robustness.

It may now be seen that heat and drought, and much solar light, are predisposing causes; and the influences of these are much enhanced by checks of any kind, and by poor soil. Heat, of course, is highly exciting, as also trying to the whole system of the plant. Heat, with deficiency of moisture, has a strong tendency to hasten the development of all annual plants; and those I have selected to illustrate this matter, may, I suppose, all be termed annuals, in one sense at least. Indeed, like a host of other things, they are annual or biennial, according to circumstances; and to exemplify the latter, is, indeed, the chief design of my remarks. Heat, with much moisture, has a tendency to produce a profusion of exuberant foliage, providing the soil is good. This condition of crops is called "proud" by many farmers. "My wheat is too proud," they will say, "it will go down."

And what makes wheat or other straw crops go down? What produces this habit, causes a crop of Cabbage, Lettuce, Spinach, &c., to become lumbering, or, to use a technical phrase, "to smother itself." The fact is, that the plant is too succulent, has grown too fast, and assumed a character similar to that of overfed and excited animals. I had almost said there was a disproportion of woody fibre. Drought in itself, without a superabundance of solar light, has a tendency to promote this "bolting," by withholding the necessary supplies, and this, more especially, if the subject has been previously much excited by heat, moisture, and a fair supply of nutriment. Such a course may be fairly classed under the head "sudden checks," the tendency of which I will further advert to. Those who would fully understand the character and influences of sudden checks, after an excitable condition, may refresh their ideas by a consideration of the effects of root-pruning, ringing, and those other manipulations. Who thinks of trying to make a seedling fruit tree bear, when only two or three years of age! And why not? Simply because there must be a fund of strength, or maturity, previous to any attempt at fruitfulness. But let a fruit tree of any kind, after being planted some three years, be transplanted at a proper season, and under proper circumstances, and the roots pruned withal, and you may feel almost assured that it will be covered with blossom-buds. Here, then, is the sudden check after high excitement; and acting in a manner much in analogy with checks on our ordinary vegetables.

But, to revert to drought and its effects on the foliage of plants, the flagging of vegetables, in cases of extreme drought, plainly shows what a change must be induced in the system.

A lean, or hungry, soil, is another cause of bolting, in vegetables, as before observed. Let us, also, examine this portion of the question. Such soils are generally "*hired*," to perform their duty by a little extra rotten manure; and, indeed, without it they would be all but sterile. The term "*hiring*" is much used in our north-western quarter, to signify that the land in question is "ploughed out," to use a farming expression, or, in order to please the gardeners, let us say "dug out." But still these technical terms may need translating, to suit ladies and gentlemen of other localities, and it simply means, in its practical accepta-

tion, that the properties the soil acquired whilst in a rest state, or pasturage, are exhausted;—there is scarcely anything soluble left in it, the organic materials especially being used up.

Then there is the sudden check occasioned by transplanting things after growing somewhat gross, and I must offer a few remarks concerning it. Plants thus circumstanced have already a fund of sap in store, nearly equivalent to the demands of the fructifying principle; and the only thing necessary to induce the habit, is a temporary and partial cessation of rapid growth, and that this is a sure consequence of summer planting is notorious to every one. But our readers may like to know why this result should follow, and, without attempting to flounder amongst abstruse phrases of science, I may offer a simple explanation, which will, I think, be borne out by both science and practice. We all surely know that the principal functions of plants may be, for an off-hand purpose, reduced to two divisions,—absorption and elaboration. As for the process of assimilation, or the appropriation, of the elaborated sap, we may pass it by, taking it for granted, that as in the animal world, so in the vegetable, the frame is built up, and the general purposes of nature carried out by a process of the kind. Now, there is at times, I conceive, a condition in which the root is unable to satisfy the demands of the branch, and *vice versa*. When the former is the case, what may we expect, but a tendency to produce leaves and branches, and a postponed fructification; when the latter, a precocious tendency to the blossoming principle, which soon, of course, overtakes the supplies. And this applies to fruits, and even shrubs, as well as vegetables. Thus, even a common countryman, without any recognition of such facts, instinctively, as it were, cuts off a part of the exuberant foliage of his Cabbages, his Greens, or his Swede Turnips; and this, although performed by mere rule of thumb, happens frequently to be correct as to principle, inasmuch as it reduces the perspiring powers of the plant, thus avoiding too heavy a tax on the root action, now in a somewhat debilitated state. I mean, of course, when transplanting gross, or leafy, plants during warm weather.

In some future paper, I may refer to fruits, or shrubs, and show how they are affected under similar circumstances.

R. ERRINGTON.

HOW BEST TO GROW EARLY PEAS.

"FLOWERS! Who cares about your flowers? Would that you could send me a juicy Cauliflower, instead of these poor starved things; or give me a taste of young Peas and Beans, instead of pointing to their blooms. Flowers! indeed; as if one could eat them!" Not so long ago, I heard, inadvertently, a colloquy, of which the above formed a part. The young gardener had cultivated, with considerable skill, some of the fashionable plants of the day. In all this he had so far pleased and met the wishes of his mistress, who, as most kind ladies are, was passionately fond of flowers. A young lady, the other evening, was greatly disappointed in not being able to catch a certain moth. I did not get a good view of it, but she described how it managed to extract honey from flowers, without ever resting or alighting upon them. This young lady's enthusiasm seemed, for the time, to be about equally divided between all sorts of moths and butterflies and the flowers. To me there is always a pleasing association between such sweet flowers of humanity and the flowers of earth, which I am privileged to tend, and nurture, and refresh. There is something of the gross and the material in thinking of such ethereal beings in connection with an apple-

dumpling or a peas-pudding. It would be vastly more romantic and poetic to imagine them inhaling ambrosia and absorbing nectar, somewhat elevated, like the refined moth, above the common rules of eating and drinking. A visit to a lady's lunch-table, or to a pastrycook's, at times, would be apt to bring us to our senses. Ladies must consume food as well as gentlemen, though, to their honour, they do not often make such a fuss about it. They may be fond of, and deeply interested in, flowers; but if they are true friends to the gardener, they will remind him that he must by no means neglect the Peas and the Beans, as Mr. — will have his table well supplied. The lady's influence tided the gardener over his difficulty, and the grumbling referred to was not repeated; but he told me, that every time the gentleman appeared in the garden, and looked along the rows of Peas—from which none could be gathered, though others round him had been doing so for a week—he did not only feel annoyed with himself, but resolved that henceforth good and early vegetables should occupy the first place in his attentions. To hear many young gardeners talk now-a-days, you would come to the conclusion that no such thing as vegetables were needed.

For the present, I will confine this gossiping to Peas. For some years after I lived here, the place being elevated and cold, unless I gently forced some dwarf variety, I found myself behind most people in the neighbourhood. The sandy gardeners near Biggleswade, and even cottagers and market-gardeners nearer at hand, in warm places, would be able to send them to market, at Luton and Hitchin, before I could gather in any quantity. I knew that early green Peas were extra desirable, and I felt proportionately mortified to be thus behind my neighbours. Some gentlemen soon found out the sore point, and used to quiz and banter me accordingly. I recollect once gathering my first dish: so young were they, that I would have been glad for the cook to take extra care that the boiling water did not take them clean away, when a gentleman visitor told me his Peas were getting so old that they would only be fit for soups. I seized on the idea, and there and then begged for a basketful of his oldest. It was no use assuring him he was quite mistaken in supposing I should be offended; quite the reverse; the Peas never came. In fact it came out that the worthy, kind gentleman, who was only quizzing me, had managed to have half a tea-spoonful the day before, in order that he might tell his friends he had had green Peas. I could tell many a similar tale about garden Broad Beans. It would do no harm to many a young gardener, who looks on a nice trained pot plant as the *ne plus ultra* of perfection, to see old generals, who had looked upon many a serried rank of bayonets, daily examining the ranks of Beans and calculating how soon they would form proper adjuncts to the bacon. Do with flowers what you can; but, as an axiom to young gardeners, let me say,—that so long as a man must eat to live, neglect not the vegetables.

In the last number, it was very pleasing to find some loose ideas on gardening economics so far confirmed by our coadjutor, Mr. Robson. There is a vast deal of truth in what he says, as to the difficulty of growing certain things in certain places; but, then, if the gardener manages to surmount that difficulty, the greater will be his own satisfaction; and that is a great thing, and the more ought his services to be praised. I tried many methods for getting early Peas, out of doors, and with various success. No care and attention enabled me to gain much time, by any mode of sowing in the autumn.

For many years, therefore, I have entirely given up autumn sowing. I would merely recommend this to a

person similarly circumstanced, and where early Peas were extra desirable. I tried sowing in spring, under glass, and in a little heat, in strips of turf, three or four inches wide, and from two inches to two inches and a half deep, cutting a groove along the centre, sowing the Peas there, and sprinkling them with sandy leaf mould. When these were turned out in lines, in the open garden, they did not quite please me. The turf seemed too stiff for the roots of the young plants; and there was apt to be too little growth at first, and too much growth afterwards, when flowering and setting were wanted.

For a good many years, without any boasting, I have been among the first, instead of the last, to gather Peas in this neighbourhood. This season I could have gathered some days earlier, but I got a good dish on the first of June, and could have gathered every day since. This may serve as a kind of contrast to the surrounding neighbourhood, but not to the south of the island, or sheltered places. I have been informed, however, that even on the first of June, though there were plenty of continental Peas, none of British growth had appeared in Covent Garden. One thing is certain, that instead of being last, I manage to have Peas among the first, distancing by a week some that used to distance me as much; and that I attribute entirely to the treatment, and that again to the checks given by replanting and thin planting combined.

Supposing that the ground intended for the first Peas is ridged, or rough dug, in the beginning of winter, turned over once or twice if it happens to be frosty, it will generally be very sweet and friable by the end of March. About the beginning of that month, Peas are sown on turf, in semi-circular drain-tiles, or in long narrow boxes, such as are used for Mignonette. If anything, I prefer the two last, but it is of little consequence, if thin planting is attended to. If these Peas can be sprung where there is a little heat, all the better; but, by the time they are six inches in height, they should be removed to a place where they can be protected merely with glass, or straw mats, or hurdles wattled with branches, exposing them, however, as much as possible. Here note that there is a check to growth, and that the plant receives its first predisposing disposition to fruitfulness. In about a week, if the weather is suitable, and the ground dry and friable, they are planted rather thinly in the rows. This gives check second to mere growth; but a little warm water being used at the roots, and dry soil placed at the surface again, the plants soon strike root in the fresh, well-aërated soil, and, before they get a great height, the blossoms begin to appear.

In planting turves whole, sown as mentioned above, I have ultimately had good crops; in turning out lengths of drain-tiles, or even dividing what was sown in boxes into largish lumps of roots and tops, I have had fine massive rows, and ultimately producing plentifully. But generally, in all such cases, I would have to wait, even if the seeds were sown the same day, for a week, or longer, as to the time of first gathering, when contrasted and compared with those planted thinly, and thus receiving more check to growth by pulling the plants separate. Luxuriance and fruitfulness are ever opposed to each other. If I have succeeded in gathering Peas much earlier than I could do at one time, either from autumn or spring sowing, I attribute it chiefly to the checks given by replanting, &c., to luxuriance.

I have tried most of the early kinds. The very earliest with me, perhaps by a dozen hours, has been *Daniel O'Rourke*; though *Early Conqueror* and *Sangster's No. 1* were close on his heels. The best moderately early Pea I still find to be the *Early Frame*. *Dickson's Favourite* is a first-class large

Pea, coming a week or ten days later still. It produces most abundantly, but not so long as some, and is thus useful, besides its first-class merit, for enabling the gardener to clear the ground quickly. After these, few families care for any but the *Marrowfats*. The finest *O'Rourke's* and *Conquerors*, of the early kinds, are very insipid after the *Marrows*. The influence of custom is always great, however. I have known gentlemen condemning first-class young Peas in the country, and others, by their example, deterred from touching them, because the individual Peas were three or six times larger than the insipid, watery riddlings they obtained as the *ne plus ultra* of perfection from the shelling women at Covent Garden. There was nothing but ignorant prejudice here. With all its undoubted merits, it is a difficult thing to get a good Pea from Covent Garden. The bringing them in quantities to market heats them, and takes away their flavour; and that again cannot be greatly improved by the shelling and riddling process before they are taken home to be cooked. A thorough epicure in Peas would like them to be gathered just before cooking. A gentleman, some time ago, expressed his surprise that such large *old* Peas should be sent to table. He had been used to the riddlings. It was only on the pods being opened to him, and finding that the large Peas were as soft as pellets of butter, that he would own that he had made a mistake. The kind was a very tall, free bearing, large, luscious Pea, called *Jeyes' Conqueror*, sent out by Mr. Jeyes, of Northampton. For moderate height, free bearing, large size, and fine flavour, *Veitch's Perfection* is first-rate. Many others, such as some sent out by Mr. Harrison, are also very good. But almost every family has a favourite "marrow" Pea; and, whilst not neglecting the trial of several, the gardener will act wisely who grows most of that which the family likes best. R. FISH.

SALT FOR PEACH TREES AND OTHER PURPOSES.

I am much pleased with the remarks made by a correspondent, "W. X. W." (page 71), on the use of salt for Peach trees. Such communications are invaluable, as they point out to us one of the most necessary ingredients in the mixture, so often mysteriously made, to promote the health and fruitfulness of a plant.

The utility of salt has been many times before the gardening public, but, with few exceptions, its uses have been said to be confined to the culture of plants inhabiting the seashore. In some other cases, it has been urged as an excellent destroyer of vegetable life, and walks and pavements have been salted accordingly. But I was not aware of its ever having been thought a beneficial portion of the compost in which Peach trees thrive, until, as detailed in a late number of *THE COTTAGE GARDENER*, I told how well the Peach trees seemed to thrive in the western parts of Lancashire, where they were subjected to strong sea breezes, and, in all probability, the soil was more charged with saline matter than is often found inland. "W. X. W." has confirmed this by referring to the luxuriant and fruitful condition of the trees he saw at Buenos Ayres, where he says the ground was almost crusted over with salt.

Now, this valuable information ought not to be lost sight of, as salt is one of the easiest as well as cheapest possible materials to apply. Occasional sprinklings will, undoubtedly, be beneficial; for, without going into the details of chemical analysis of soils, there are some prevailing ingredients in every one, which may be in a measure known with but very little trouble. Supposing, for instance, that lime, iron, and salt were taken as bases; the first of them prevails in chalky or limestone districts, while iron may be detected in some soils by certain rusty veins which intersect them, when they have lain some time in an undisturbed state, as in a pasture field. Water, also, very often denotes iron, by a red seum or sediment,

in some cases so much impregnated with it as to stain its bed a bright red colour. Salt, however, is not so easily detected; but it doubtless exists in greater abundance in those districts where it is dry, in a mineral form, or where the sea breezes carry it inland. Its use, however, as a manure, has not yet been so fully tested as it ought to be. A more extended series of experiments will, probably, prove it to be useful to many things it was never thought to do any good to. For instance, amongst flowers, it is probable *Verbenas* may like it; as we are told the old *V. melindres*, and other parents of our flower garden varieties, are found wild in South America,—possibly at Buenos Ayres, where, as "W. X. W." says, the Peach tree flourishes in its well-salted bed.

Much useful information would be disseminated, if all travellers, like "W. X. W." would but notice and duly report what they see in their travels. Our previous idea of the Peach was, that it inhabited the sunny climes of Asia Minor, Armenia, and Persia; the latter country being particularly adapted to its growth, though not fertile in corn, and still less suited to grazing. Apricots are, no doubt, subject to much the same influences as Peaches, and, like them, only thrive well at certain places. Would it not be worth while, in some of the places where they do not succeed well, to apply a little salt to the ground by way of a trial,—say to one or two trees, and to leave the others as they are? Many other things might be tried in a similar way: for it is possible we may find this much neglected manure as useful in the cultural as it is in the culinary line. A liking for salt may be more widely spread in the vegetable world than is generally expected: we all know how easily it is applied. Its uses in a Peach border ought, certainly, to have a fair trial; and if it be found to benefit the trees, then the gardening world owes a debt of gratitude to "W. X. W.," which I am sure it will not be slow to acknowledge.—J. ROBSON.

HARDY FERNS.

(Continued from page 114.)

SOWING.—Since writing the paper on raising hardy Ferns by seed, at the above-mentioned page, I have had the pleasure of looking over a large collection of both hardy and exotic Ferns, belonging to Mr. Glover, of Smedley House, near Manchester, an enthusiastic admirer of plants in general, but more particularly of my favourites, the Ferns. I found that he was not only an admirer, but a successful cultivator also, both in raising them from seed and growing them well afterwards. His mode of growing some species of exotic Ferns is peculiar, and when I arrive at that part of my subject I shall detail that mode. On this occasion I shall notice his mode of raising seedlings. In the house where the seed pots are placed there is such a moist air kept up, that even the outsides of the pots are thickly covered with young Ferns. He does not sow the seed in pans, but in pots, about five inches wide, and mixes the compost with old bricks, broken very small, instead of sandstone, as I recommend. The seed pots are placed in saucers, and they are kept full of water, the moisture from which, ascending through the drainage and compost, and confined by bellglasses set within the pots, causes a regular moisture,—just the thing to encourage the seeds to grow. The success of this mode is very great. Some species, however, even baffled him, especially the *Asplenium marinum*: but, determined not to be beaten, he shed some of its seed on the earth border, under the front platform, and on the front wall inside; and, curious enough, there they germinated freely. Mr. Glover told me, that a friend of his had discovered a new mode of propagating Ferns, besides the ordinary ones of seed and division, and that is by cuttings. Let not the Fern grower start at this, curl his lip, and pooh, pooh it! the thing has been done, for I saw several plants so raised. As I understood, the method was this:—The lower part of the frond was preserved, and cut off smooth at the bottom, and the upper part considerably shortened in: the cutting thus made was then put in sand, and covered with a bellglass; a callosity was formed at the lowest part, and from that the germ of the future plant sprung up, soon put forth roots, and eventually made a plant. Let every Fern grower try this. We know many plants are propagated by leaves, and why not the Ferns? Another mode of raising Ferns from seed has been com-

municated to me, in a letter, by my esteemed friend Mr. Frazer, gardener to John Shaw Leigh, Esq., of Luton Hoo Park, near Luton, Beds; and a brief description of the hardy Fernery there which he has formed. I think all hardy Fern growers will be as much gratified by it as I was. I, therefore, venture to quote it, and trust my friend will forgive me doing so. He says:—

“I have been reading with much interest, this morning, your mode of propagating hardy Ferns. I am now raising many seedlings of the exotic species. The *Bird's Nest* (*Asplenium nidus avis*) I have long tried without success, till lately. I find it can only be induced to germinate when sown on pieces of mossy bark; or, I daresay, as you recommend, on pieces of brickbats, or sandstone. It is impatient of too much moisture, when young; indeed, I have had thousands germinated in the usual way, but I lost them after they got the seed-leaf perfected. You have not seen our root garden (fernery), or, as some people call it, a briekery. It is composed of spoiled bricks, run into large clinkers,—perhaps ten or twelve bricks run together. These, washed over with cement, to make them look like stones, and a mixture of large pudding-stones (dug up hereabouts), roots of large trees, and some stumpy heads of Pollards, form our Fern garden. Amongst the Ferns, I grow some Alpine plants. Also, last year being the first season, I planted out, by way of making a show, some rather tender things in this garden, which astonished me by their free growth. For instance, I never had finer Balsams under glass. On one or two Pollards I planted a lot of the different varieties of Portulaca, which far surpassed any I had ever seen: and this season these Pollards are a complete turf of seedling Portulacas, as thick as bristles on a hog's back. Mr. Robson remarked, in THE COTTAGE GARDENER a few weeks ago (and it is quite true), that tropical plants will not stand our winters, but seeds of them have been known to do so; that is, the frost will kill the chicken, but not the egg.”

These observations of Mr. Frazer's are valuable, and lead the reflective mind to think over many points of culture that may be useful to practice. No doubt, the pieces of mossy bark, covered with a bell or handglass, would, if kept moist and warm, be a good seed-bed, if I may so term it, for many species of Ferns that have hitherto failed to grow from seed. Perhaps the most difficult of all Ferns to raise by seed are the *Gleichenias*, which may be the cause why they are so expensive, some costing as much as ten guineas a plant. Let the possessors of plants of that rare genus, try the mossy bark as a seed-bed for them, and it is more than probable they will succeed in obtaining a crop.

Mr. Frazer's fernery has been alluded to by Mr. Fish, in THE COTTAGE GARDENER. I do hope to see it some day myself. It must be very interesting; I know no expense is spared to make the collection as complete as possible. As the Ferns grow into larger specimens, the extra plants, such as *Balsams* and *Portulacas*, will, no doubt, be dispensed with. The remark, that seeds are not injured by frost, is interesting, and in the warmer parts of Britain may be useful. For if a plant springs from the seed naturally, in the open air, and escapes, in its chicken state, the late frosts, it will make a stronger and better flowering plant than if it had been raised in heat, and coddled in its youth. It would then have to get through such a hardening process before it made any growth, that the summer would be half over before any progress was made to bloom.

Where natural rock stones are difficult, or expensive, to obtain, then these conglomerated bricks come in very well as a substitute. Clay, for brick making, abounds much more than stone; hence there is no difficulty in getting them. Indeed, they might be so burned and run together purposely, to form rockwork, for a fernery or for Alpine plants; and, in that case, might be formed into larger blocks than the usual size, when made for building purposes.—T. APPLEBY.

HORTICULTURAL SOCIETY OF EDINBURGH.

UNDER the favourable influence of genial June, the verdure and bloom of the fields and gardens are refreshing the senses and invigorating the frame. Horticulturists, among others,

have much to occupy their attention, and the display at the flower shows, whether in cities or secluded hamlets, testifies to their zeal and ability.

One of these displays, in connection with the recently instituted Horticultural Society, took place in the Royal Zoological Gardens, Broughton Park, on Saturday last, and the commencement it has made augurs well for its prosperity. The morning was threatening, but brightened up at mid-day, as if to do honour to the event, and lend additional *éclat* to the spacious, well-ventilated, and handsome hall, erected recently in the Gardens by the spirited proprietors.

From the various nurseries, as well as the gardeners, in the suburbs and surrounding country, extensive collections of beautiful and well-grown stove, greenhouse, and border plants were received, reminding us much of such plants as were, till lately, seen only at the London exhibitions.

The following are the more prominent objects sent for exhibition by the various nursery establishments, which added much, by their variety and beauty, to the interest of the gay scene.

Messrs. P. Lawson and Sons, of Golden Aeres Nursery, contributed fine specimens of *Allamanda nerifolia*, *Polygala oppositifolia*, *Coleonema tenella*, *Pimelea diosmæfolia*, Cape Heaths, &c. Some French Geraniums, Shrubby Calceolarias, and Seedling Cape Heaths were also sent from them, and much admired. We regret that, from some inadvertence, these fine plants were placed in a disadvantageous position in the hall, which prevented their being examined in detail so carefully as they deserved to be.

A somewhat similar collection of stove and greenhouse plants was sent by Messrs. Dickson and Co., Leith Walk, comprising superb Gloxinias, Azaleas, Pelargoniums, Ericas, Aphelaxis, &c. An *Epidendrum cepiforme*, and well-trained *Tropæolum edule*, were also conspicuous objects.

By Messrs. Dickson and Sons, Inverleith, an equally varied and interesting contribution was made, consisting, among others, of *Polygala Dalmaisiana*, *Tetralthea verticillata*, *Cissus discolor*, *Solanum purpureum*, *Boronia Drummondii*, Cape Heaths, &c.

Mr. T. Methuen, Stanwell Nursery, Bonnington, exhibited a stand of very fine blooms of the newer late-flowering Rhododendrons, which were much admired. Also, a collection of miscellaneous greenhouse plants.

Mr. C. Alexander's (Larkfield Nursery) collection occupied the table at the entrance with a fine display of miscellaneous plants, amid which were conspicuous—six large herbaceous Calceolarias, several fine fancy Geraniums, Indian Azaleas, blooms of Roses and Pansies, and *Dun's Cape Stocks*. An extra large *Tom Thumb* Geranium, and *Silver Swan* Fuchsia also attracted much attention.

From Messrs. Downie and Laird, West Coates Nursery, was also sent a collection of pot plants, containing some nice specimens. Of Pansies, also,—of which they are well-known successful cultivators,—there was a nice stand; and among them a good white ground seedling, named *Mrs. Laird*, to which the Judges awarded a certificate of merit.

Mr. R. M. Stark, Edgehill Nursery, Dean, sent a stand of spikes of the German hybrid Iris, a family much admired for the variety and beauty of its colouring; also, a few greenhouse and Alpine plants, and some interesting exotic Ferns and Lycopods. In his collection, we also saw the following new plants:—*Clianthus Dampierii*, a fine species from Australia; *Aralia papyrifera*, the rice paper plant of the Chinese; *Chrysobactron Hookeri*, from New Zealand; a deep blue scented Myosotis, named *Azuera*, probably a hybrid allied to *M. Azorica*; and *Dictamnus Taurica*.

Mr. T. H. Douglas, Rosebank, contributed a fine collection of showy plants of various kinds. Among these we noticed specially a fine double white Petunia, named *Antigone*, which is a great acquisition to the family; and, in a case of stove plants, the new and beautiful *Begonia Rex*, recently introduced to cultivation by a Belgian nurseryman. This is a truly royal plant, as its robes of richly tinted foliage well deserve the specific name. Mr. Douglas had also among his Pansies three new seedlings, named respectively *Lady Belhaven*, *Alpha*, and *Mary Lamb*, to which the Judges awarded certificates of merit.

From Warriston Nursery (Mrs. Carstairs) was supplied a large and varied collection of Geraniums and other bouquet-

producing flowers, which occupied a considerable portion of the stage-room, and enhanced the beauty of the exhibition.

Messrs. Cunningham, Fraser, and Co., Comely Bank Nursery, had, among other productions of merit, some fine blooms of Roses, among which was conspicuous a rich spike of the fine Tea Rose, *Cloth of Gold*. It was much admired, and shows to what perfection this queen of flowers can be brought, even in our northern clime.

Mr. W. Young, South Bridge, exhibited an elaborately-executed glazed case, filled with nice flowering plants in pots, and also some nicely flowered early forcing Geraniums, which show how much may be done by the zealous amateur, even amid the city smoke.

Some fine spikes of *Miscari comosum*, var. *monstrosum*, were exhibited by Miss Yule, Broughton Park.

John Gibson, Esq., Woolmet, in addition to competition articles, exhibited a fine stand of Roses, including two seedlings which were much admired.

The contributions to the kitchen vegetable department, though small in quantity, were of superior quality. In addition to the prize articles, we noticed, from Mrs. Brydon, Murrayfield, some fine Turnips and Cabbages, and a magnificent bunch of Rhubarb, weighing sixty-three pounds.

Mr. J. Taylor, Inverleith, and Mr. Stewart, Bangholm, also had some very fine bunches of Turnips, Broccoli, and Cabbage.

The hall was well filled throughout the day, with a numerous and respectable company, who seemed highly gratified with the rich, intellectual treat provided for them.

By the kind permission of Major C. Inge, the band of the 1st Staffordshire Militia was in attendance, and performed a selection of the most popular and fashionable music.

THE POTATO MURRAIN.

THIS neighbourhood has been visited with a most terrific storm of thunder and lightning, accompanied with very heavy rain. It began about half-past twelve o'clock, and continued till near two o'clock this morning (June 17th). The lightning was very vivid; the flashes succeeding each other in quick succession, so much so as to light the surface of the earth for nearly half a minute at a time. On looking over my crops of early Potatoes I find some of the leaves attacked with the old form of disease. I inclose a few for your inspection. The kinds attacked most seem to be the *Handsworth Seedling*, and a variety called *Hen's Nest*, both early round kinds. We could not see the least trace of the scorched appearance on the leaves before this morning, although minutely examined daily. Is not the disease making its appearance, on the leaves at least, much sooner than usual, as the tubers are but just forming—about as large as Peas? And does not this instance strengthen the opinion, that to electricity, or the state of the air during severe thunder storms, may be attributed, in some degree, the cause of the disease? After such occurrences, it seems to make its appearance, regardless of any particular time, or stage of growth.

This being a late locality, the tubers will not be fit for table for several weeks yet; so I cannot report thereon.

I hasten to send you this communication, so that your correspondents from earlier districts may give us some information as to the appearance of their crops; and I hope our Potato friend, Mr. Bennett, will let us know how they are looking around Worcester. I never saw them look stronger, or more promising, than they do at this time here.—G. T. F., near Leek, Staffordshire.

THE CARRAGEEN MOSS.—To preserve it for esculent purposes, it must be washed in fresh water and then left to dry, when it soon becomes horny to the touch, and resists pressure. If boiled, it subsides into a thick colourless jelly, that is thought to be very nutritive, and is employed for many purposes. Invalids take it in their tea, or epicures in their blanc-mange. Calico-printers boil it down into size, and use it in their manufactures. It is said to be a good fattening substance for calves, if boiled in milk; and, lastly, pigs are very fond of it when it is mixed with Potatoes or meal. It is sometimes known by the name of "Irish Moss." It will grow in an aquarium.—(*The Common Objects of the Sea-shore.*)

PEGGING DOWN VERBE NAS.

ALLUSION having been made, in *THE COTTAGE GARDENER*, to the difficulty and *expense* of procuring hair-pins, I beg, for the information of your readers, to say, that they can be purchased in this town (Southampton) for 10½d. per pound, and that they average twenty-five in each packet, there being twelve packets, or thereabouts, to the pound. I have used them for the last two years, and find them very beneficial and cheap for pegging Verbenas, Petunias, &c. I enclose one of the pins to show you that they are really good.—H. J. BUCHAN.

[They are stout and about three inches long.—ED.]

THE FRESH-WATER AQUARIUM.

(Continued from page 87.)

RECTANGULAR TANKS.

THE rectangular tank is much to be preferred to the circular aquarium; for, besides the advantage of a ready inspection of the whole of its contents at once, it is stronger, and, if of plate glass, unaffected by changes of temperature.

The framework may be of wood or iron, the glass being fixed in grooves, by either Scott or Davy's cement, or white or red lead putty; in the latter cases, requiring a month's setting.

It would occupy more space than is desirable, were I to state the numerous misfortunes which have befallen me in the use of sheet glass, as a material for glazing rectangular vessels. A small one, holding about four gallons, with sides one-eighth of an inch in thickness, starred off at each corner, merely from changes in the atmosphere.

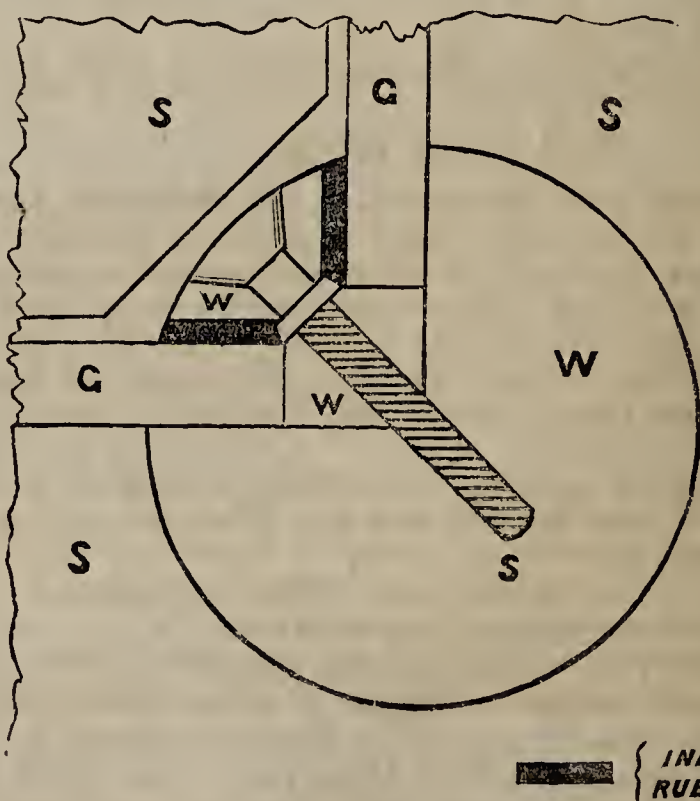
My advice to all aquarists then, is—In the construction of an aquarium, *never use any glass of a less thickness than three-sixteenths (of an inch) plate.*

THE COTTAGER'S TANK.

I have seen aquaria with bottom slabs, corner uprights, and top rail, of plain mahogany or deal, manufactured by young men unable to purchase of the regular dealers,—all the ornamental parts of one having been finished with a pen-knife. After a little seasoning these vessels become quite water-tight.

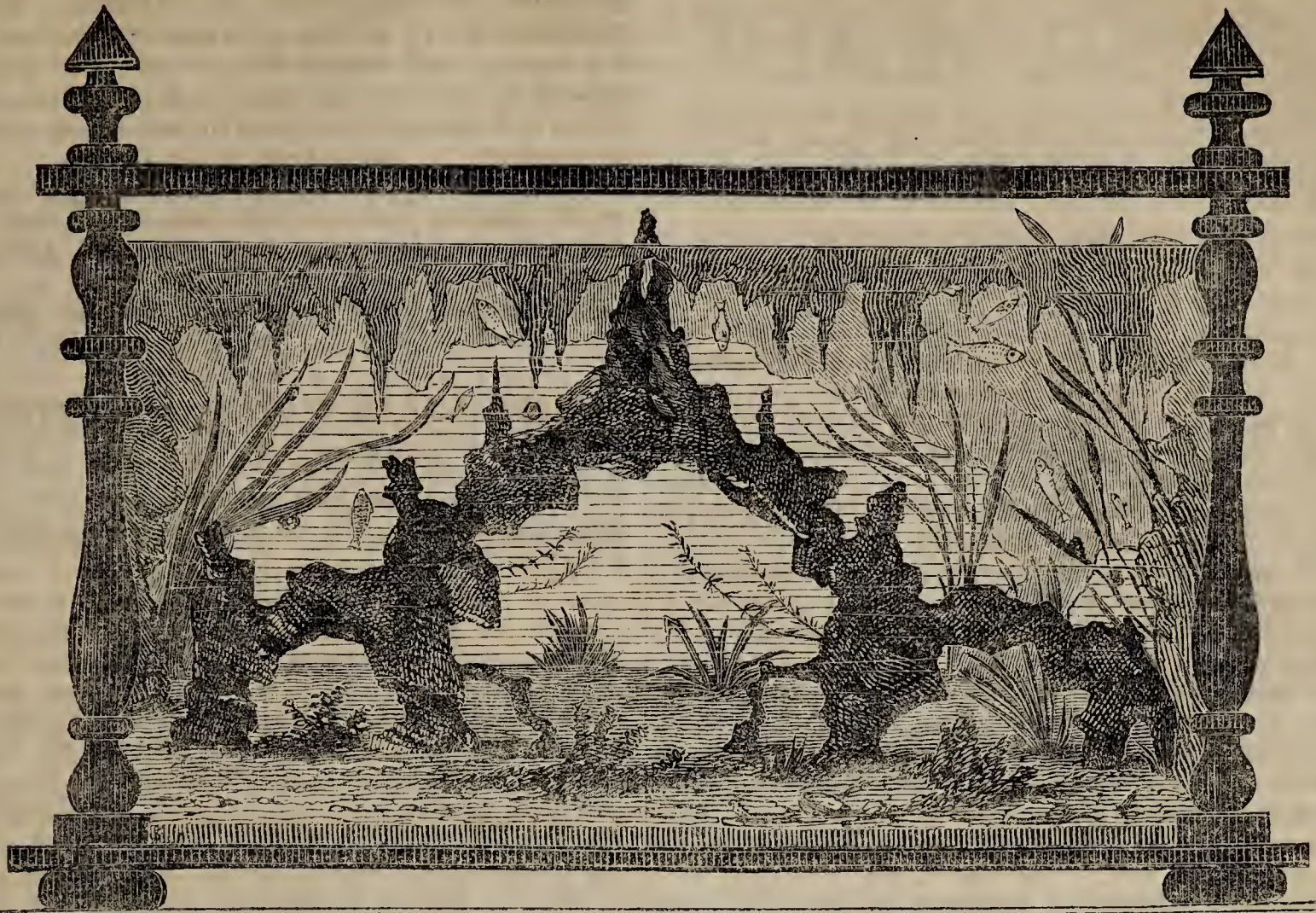
INDIA-RUBBER JOINTS.

A safe, and most durable, *regulating* joint for the corners of rectangular tanks, has been introduced by Mr. J. Russell.



and is represented in the accompanying engraving. W. is the mahogany or iron corner pillar in horizontal section. By the screws S., placed three inches above each other, slips of one-twelfth of an inch vulcanised India rubber are kept pressed firmly against the surface of the plate glass sides, G. G., so that no liquid can possibly pass through the joint. The grooves in the slate slab S., at the base, are stopped with white lead putty in the usual way, and varnished, when *thoroughly* set, with shellac dissolved in spirits of wine.

VARIETIES OF TANKS.



During the last twelve months the makers have devoted a great deal of attention to the formation of strong, yet tasteful aquaria, and some very happy effects have been produced. Good, serviceable, well-jointed, iron-framed tanks, with ornamental mouldings and slate bases, are to be procured at the following prices :—

Length in inches.		Height in inches.		Width in inches.		£	s.	d.
36	...	18	...	16	...	4	15	0
28	...	16	...	16	...	3	12	0
26	...	15	...	12	...	2	10	0
24	...	15	...	13	...	2	10	0
20	...	14	...	11	...	2	0	0
18	...	12	...	10	...	1	8	0

Those with more elaborate exteriors range from £10 to £30.

TERRA COTTA AQUARIA.

The following novel arrangement is effective :—Both base and ends of the tank are formed of a slab of terra cotta, glazed inside, grooved near the edges for the reception of the glass at back and front. The terra cotta at each end is carried round into a semi-circle, forming a kind of half-vase, which is filled with Ferns, or plants in flower. Both material and manufacture are cheap, but the weight renders carriage expensive.

In selecting an aquarium, of whatever description, it is always well to visit the best makers. When green on the subject, I was supplied (*to order*) by some unprincipled manufacturers, since vanished, with a large tank glazed with *sheet* glass. Of course it was soon in pieces.

What a distinction we find between the works of God in nature, and the dealings of man! Were the blackening

effects of sin expelled, and the purifying influences of the Gospel infused into common business, we should, in *all* cases, be able to take the opinion of the seller; as it is, we must examine the article, if we know not that the vender is of sterling character. Cheap aquaria in zinc are now offered to amateurs. By all means avoid these makeshifts, or, on coming down stairs some fine morning, you may be mortified by the sight of a broken tank, dead fish, and—won't you get it—a *damaged carpet*!—E. A. COPLAND.

[This, and two more communications, completing the subject, are posthumous, for their author is no longer of this world. It is with far more regret, than usually accompanies the recording of the death of one known only to us as a correspondent, that we make this announcement.

MR. EDWARD A. COPLAND, of Bellefield, Chelmsford, has contributed numerous articles to the pages of this Journal, in which, we have reason to know, he took great interest. We are informed that, for the long period of two years and four months, he was labouring under pulmonary consumption, and though, like most persons subject to that insidious disease, he was sometimes better, yet he finally sank on the 22nd of June, in the twenty-third year of his age. He was a young man of considerable ability, and was brought up as a civil engineer. During his long illness he was a regular contributor to this and various other periodicals. He also wrote the pamphlet "Photography for the Many," originally published in these pages, and some others. His great object and desire was to employ himself, whilst able, for the glory of God, and the good of his fellow creatures, as may be seen from the religious tone of many of his papers. His endeavour was to combine religion with the matters of every-day life, and his end was "peace."]

ENTOMOLOGICAL SOCIETY'S MEETING.

THE June Meeting of the ENTOMOLOGICAL SOCIETY was held on the 7th inst., the chair being occupied, in the absence of the President, by J. O. Westwood, Esq., M.A., Vice President. Amongst the donations announced as received since the last Meeting were—Dr. Asa Fitch's valuable "Reports on the Insects Obnoxious to Agriculture in the State of New York;" the "Report of Proceedings of the first Meeting of the East Kent Natural History Society," pre-

sented by Capt. Cox; also, the first volume of the "Annals of the Entomological Society of Belgium," which led the Chairman to congratulate the Society on the addition of another to the various National Societies for the Cultivation of Entomology, founded on the example of those of London and France. The publications of the Linnæan Society, and various other recently published works on Entomology, were also presented by their respective authors.

Mr. Samuel Stevens exhibited specimens of the rare *Dinarda Maerkelii*, taken in ants' nests near Guildford, during the recent excursion of the Society to that place. Several very rare species of Ants were also taken, living in the nests of *Formica fuliginosa*, and not forming separate colonies of their own.

Mr. Ianson exhibited a new and curious little Hemipterous insect, found in ants' nests, at Black Park, which he considered to belong to the genus *Microphysa*, of Westwood.

Mr. E. Shepherd also exhibited a new British species of Pselaphidæ, belonging to the genus *Trichonyx*, also found in ants' nests, near Guildford.

Mr. Stainton exhibited a new species of British Micro-Lepidoptera, belonging to the genus *Cemiostoma*, and closely allied to *C. scitella*. He also read a short paper on "Permanence in Species," in opposition to the remarks made at the last Meeting, on the possibility of the modification in the specific characters of certain species of minute Moths, producing permanent, or local varieties, which had been regarded as distinct species. A discussion upon this subject took place, the question being, also, one of considerable interest to botanists, many of whom now consider certain supposed species to be only modifications of well-known plants, arising from diversity of culture, &c.

Mr. F. Smith exhibited two remarkable specimens of wild Bees (*Nomada baccata* and *Andrena nitida*), in each of which the body was divided down the centre, the right side of the specimens being masculine and the left side feminine.

Mr. Douglas exhibited several new and rare minute Coleoptera, recently captured in Richmond Park and Darent Wood.

Mr. Westwood exhibited a specimen of the Moth he had reared from the jumping seeds from Mexico, which had attracted so much attention during the past winter; and read a description of the perfect insect, to which he proposed to apply the name of *Carpocapsa saltitans*.

Mr. Westwood also read some extracts from the Reports of the British Association at Manchester, and the recently published life of the late H. Strickland, by Sir Wm. Jardine, for the purpose of proving that the law of nomenclature, published in the Reports of the Association, had received the sanction of the whole of the members of the Committee, appointed by the British Association for their preparation, with the exception of Mr. Ogilby.

Mr. Spence communicated a drawing of the male and worker of the curious genus *Dorylus*; which had hitherto much perplexed Hymenopterists as to its affinities. It had been observed by the Honourable Walter Elliot, near Madras; and it turned out that the genus belongs to the family of the ants, and that its worker had been established as a distinct genus by Mr. Westwood, under the name of *Typhlopore*, which he had rightly referred to the family *Formicidæ*.

Mr. Smith stated that Mr. Savage had published an account of the species of *Dorylus* in the "Philadelphia Transactions," in which he had associated with it *Anomma rubella* as its worker.

Mr. W. W. Saunders read a monograph of the genus *Erycina*, containing some of the most elegant species of Butterflies in existence. A number of new species were described.

Mr. Vardon gave an account of the great injury which his Apple crop had suffered during the present and two preceding years, owing to the attacks of the Caterpillars of the Winter Moth (*Cheimatobia brumata*). He had about 1000 acres in cultivation, and he feared he should be under the necessity of cutting all his trees down, as well as the undergrowth of Gooseberries and Currants.

Mr. Westwood suggested the plan adopted in Germany, for preventing the wingless females of this species from ascending the trees, in order to deposit their eggs on the present year's shoots, as detailed in Kollar's work on destructive insects. The subject led to considerable discussion.

PAYNE'S HIVES.

YOUR correspondent, "REDOLENTQUE THYMO," inquires where *Payne's Hives* are to be met with. They were formerly made at Bury St. Edmunds; but a reference to his book will

show their form and dimensions, which anyone can follow who is able to make a straw hive at all. In the "Bee-Keeper's Manual" (5th edition), also, Mr. Taylor has described and illustrated them; but the latter adds, "That he (Mr. Payne) has recently seen reasons for altering the dimensions of his hives from twelve inches wide, to fourteen inches, and seven inches in height (both withinside), and which I have adopted as preferable." Your correspondent appears to have imbibed some prejudice against what he calls "fancy hives;" in other words, such as possess certain advantages, and extra conveniences for enlargement, deprivation, &c., adding often, no doubt, to the cost. He has been ignorantly tutored into the belief, that starvation and death are the necessary consequences of deprivation. It is, therefore, well to say, that Mr. Payne's system is a depriving one, in which brimstone forms no part. I apprehend that Mr. Tegetmeier's boxes are, also, what "REDOLENTQUE THYMO" would denominate "fancy hives," fitted up with bars, slides, windows, and other devices. Merely a square box, with no adjuncts or conveniences, any carpenter can make, who can put five pieces of deal together.—AN OLD APIARIAN.

NEW BOOKS.

THE CHEMISTRY OF THE WORLD.*—It too frequently happens, that the subjects with which we are least familiar are those which are most common around us. The air we breathe, the water we drink, the light that gladdens, and the heat that warms us, are all alike common; but how many of those who receive these advantages care to understand them, or take the trouble to ascertain the influence they have on their existence. Were we to give more heed to the gifts with which we are so abundantly surrounded; were we to study them more closely in their influences on ourselves and on creation around us; were we, in short, to study more the chemistry of the world, as it relates to all created things, we might aid very much our own comfort and happiness, in the things pertaining to this world, while at the same time we should be led to see and admire the wondrous works and providence of Him who "created all things out of nothing." In the work before us, Mr. Johnson has exhibited a thorough acquaintance with his subject, and has, in a pleasing manner, popularised it, so as to divest it of all the technicalities which scientific men generally consider it necessary to clothe in. We have here the whole science of creation presented in all the attractiveness of an interesting tale, while the truths of science are strictly preserved. Let us take, for example, the following facts relative to the pressure of the atmosphere:—

"Persons who have delicate constitutions, need not wonder that they are generally much affected by a change in the atmosphere, when they learn, that often in the course of a few hours there is an increase or diminution of one hundred weight, and from that to half a ton weight, of atmospheric pressure on each individual, while the *internal* pressure of the circulating fluids remains the same. Supposing a man's body to contain fifteen square feet of surface (which is near the truth) he will sustain a body of air of upwards of fourteen tons weight. But it is necessary to remark, that the air presses upwards, downwards, and sideways in every direction, and that it is owing to this equal pressure that we are not injured by the vast weight of the atmospheric, for the equal pressure on all sides resists as much as it is resisted.

"So, also, would the atmosphere be fatal to life, both animal and vegetable, if it were constituted otherwise than it is. Its oxygen is called the vital air of animals, and carbonic acid the vital air of plants; and justly are these gases so called, for those organised creatures could not live if those gases were withdrawn from the atmosphere; but, on the other hand, those gases only sustain life and health mixed together with azote in the proportions in which they are always present in the atmosphere. Animals in an atmosphere of pure oxygen, and plants in an atmosphere of pure carbonic acid, speedily die. So it has been ascertained, by experiment, that no other gaseous body with which we are acquainted, can be substi-

* *The Chemistry of the World. Being a Popular Explanation of the Phenomena daily occurring in and around our Persons, Houses, Gardens, and Fields.* By George W. Johnson. London: Cottage Gardener Office.

tuted for atmospheric air. All the known gases have been tried, but they all prove fatal to the animal which is made to breathe them. Even water absorbs air when exposed to the action of the atmosphere, and thence becomes a fit element for the various tribes of creatures which inhabit it."

Then we are told of the marvellous consumption of this article, atmospheric air, which takes place daily:—

"When a full-grown man, of average stature and development, fills his lungs by a deep inspiration, they contain about 300 cubic inches of air, and at every expiration he emits 190 cubic inches. The breathing capacity of a woman's chest is little more than half that of a man, and decreases in proportion to the tightness of the corset she wears. A man draws in his breath on an average twenty times every minute, and, consequently, 28,800 times in the course of a day and night. At each inspiration about sixteen cubic inches are inhaled, and, therefore, a man daily takes into his lungs about 240,800 cubic inches of air, and, in ordinary breathing, the air thrown out from the lungs nearly balances the amount drawn into them. The 240,800 cubic inches, inhaled during twenty-four hours, contain 48,160 cubic inches of oxygen, of which about 46,000 are retained for the purpose of combining with the blood, as this life-tide circulates through the lungs. Part of that oxygen, combining with the superfluous carbon of the blood, changes the purple colour of the venous blood to the crimson hue it exhibits in the arteries, and is breathed forth in the form of carbonic acid gas, which averages about $4\frac{1}{4}$ per cent. of all the air thrown forth from the lungs. Some of the oxygen inhaled also combines with the hydrogen of the blood, forming water, and this in the form of vapour, heated to about 98°, the temperature of the healthy body, is produced at the rate of rather more than nine ounces daily."

In speaking of "The Clothing of the World," there is this passage:—

"The celebrated Boerhaave used to say, that nobody suffered from cold save fools and beggars, the latter not being able to procure clothes, and the former not having sense to wear them. Be this as it may, we can with the strictest truth testify, that in many cases, where the powers of medicine had been tried in vain, the patient has been cured by wearing thick shoes, a flannel waistcoat and drawers, a pair of under-stockings, or a flannel petticoat, to be worn during the cold season at least. Where warmer clothing is wanted, we would recommend the fleecy hosiery to be worn next the skin.

"We have already noticed that clothing is warm, owing to its preventing the escape of heat from the body, and clothing does so in proportion as the material of which it is composed is a bad conductor of heat.

"Linen is a better conductor of heat than cotton, cotton than wool, and wool than fur; consequently, linen forms the most cooling of apparel, or, in other words, allows the heat to pass through it from the body fastest; and cotton, wool, and fur do so in the order in which we have mentioned them.

"We clothe ourselves with wool because it is a bad conductor of heat, and retards its escape from the body. The inhabitants of Russia clothe themselves in fur because fur is a still worse conductor of heat than wool. Sheep are natives of a temperate climate, but the bear and the ermine of the coldest. The provident care of the Creator is evidently conspicuous in this appointment, and discovers the same undeviating attention to the comfort of all his creatures: hence the clothing of animals in the torrid zone is hair, in the temperate zones wool, in the frigid thick fur.

"The tighter a dress fits the more cooling it is, because there is less air between it and the skin, and *confined* air is one of the very worst conductors of heat. All confined bodies of atmospheric air are non-conductors of heat. It is on this principle that double windows preserve the warmth of apartments at an equable temperature. In like manner, double lids for boilers, formed so as to hold a sheet of air, are found to be very effectual for preserving the heat of the liquor with a very small portion of fuel.

"On this principle it is that light spongy substances, such as furs and down, afford the warmest clothing. Hence it is, that the carpet of snow which covers the earth in winter is spread out by nature with so light a hand that it might hold an abundance of atmospheric air within its interstices, to

preserve the warmth of those innumerable tribes of vegetables which it is destined to protect."

These are but two or three specimens of the character of the whole book, which is throughout written in the same highly entertaining style, forming a handsome volume of 500 pages, containing information, communicated in a similar style, and with many illustrations, on the soil, light, heat, air, water, vegetable food, animal food, beverages, clothing, poisons, medicines, and metals of the world. We commend it very highly, as a book that everybody ought to possess.

NORTH RODE,

THE SEAT OF T. DAINTRY, ESQ.

CHESHIRE is, as almost all the world knows, famous for its excellent cheese; and it is equally renowned for the gentry that reside in it,—the "Cheshire gentry" being quite a common saying. Perhaps there is no county in England, where there is such an uninterrupted succession of the seats of noblemen and gentlemen. Commencing near the town of Macclesfield (the great emporium of silk manufactures), the tourist may visit beautiful mansions, parks, and gardens, quite up to the walls of that singular, old-fashioned city, Chester, and even beyond it, to the sea-coast opposite Liverpool. Each seat has its peculiar beauties, and yet there is a certain resemblance running through the whole. There is generally undulating ground in the various parks, which are mostly well clothed with wood; and each have fine sheets of water, in some even approaching to the dignity of lakes.

Lately, I was rambling in this rich county, and, having often heard of good gardening at North Rode, I made it in my way to call there. The North Staffordshire railway runs near it; in fact, there is a station, about five miles from Macclesfield, named North Rode. The mansion is about a mile from the station. A beautiful winding, broad, well-kept lane leads to it. When I visited it the morning was beautiful, and everything pleasant,—such as birds singing, wild flowers blooming, and the pastures thickly clothed with rich grass, on which the Cheshire cows were quietly feeding,—just such a morning as would raise in the heart of a right-thinking man, thankfulness that he lived in such a beautiful, happy, free country. I am not ashamed to confess, that I felt grateful to the Giver of all Good, on that occasion especially. The quiet scene, the pleasant weather, the pure air, and the beauty and bounty spread before me, was truly delightful and refreshing. These thoughts passed through my mind as I wended my way through this truly English scene. The wild flowers I noted were the Self-Heal (*Prunella*), with dense heads of purple flowers; the Stichwort (*Cerastium*), with its pure white, starry blossoms; the pink Ragged Robin (*Lychnis*); the blue wild Hyacinth, or Blue Bell; the white Hawthorn; and the insignificant, though thickly-clustered Holly-blossoms;—all, and many others, being very interesting. And Ferns were unfolding their lovely fronds in abundance, in shady, moist places. These observations beguiled the way, till, on descending a gentle slope, the lake burst upon my sight in all its beauty. Glancing over it, the modest mansion appeared on the opposite hill, embosomed in trees, in their bright spring clothing of pure green. Crossing over the embankment of the water, the road turns to the right, and I came to the simple and elegant entrance-gate. On the left I noticed a pretty village, ornamented with a beautiful church spire, crowning the highest ground. Near it there is a considerable plantation of Firs, in a happy position to give variety, both in colour and contour. When more advanced in growth, they will break the sameness of the sky-line, and give a fulness to the background of the view in that direction. The trees in the park are, comparatively speaking, young; though, at a distance, I saw some Beches and Oaks, venerable in their old age.

I entered the dressed grounds, and made my way at once to Mr. Chaplin, the gardener, and he very civilly paid me every attention. I found him, as I expected from previous information, a gardener in truth and in deed, quite devoted to his business, and, in consequence, successful in his practice. We first entered the vineries. The Vines were luxuriant and healthy, and bearing an immense crop, indeed too many, as I told him I feared, to colour well. But he said—No; I know

what my borders are; for I made them myself, and I believe the Grapes will swell up, and every berry colour well. I know the roots are sound and healthy, as you see the wood and leaves are; so I have no fear. Last year they did well, and I trust they will do so this.

Near the vineries, there are some low, span-roofed houses (one is a stove), in which I noted well-grown plants, some going out of bloom, and cut in to grow, and others coming into bloom. I was told there was a conservatory adjoining the house, and all these plants were grown with a view to keep it constantly supplied with plants in flower. This is legitimate. Plants so grown, and then bloomed in a conservatory, are not injured, like those unhappy plants that are, when in flower, placed in dry, dusty rooms, or in the draughts of an entrance-hall. The kinds of plants grown I need not enumerate. The reader may easily conjecture what they are for such a purpose. I may mention, however, the following in this conservatory:—Camellias, Azaleas, Epacris, Ericas, Geraniums, Fuchsias, and stove plants for summer decoration. The plants were grown in good style, equal to many I see at exhibitions.

Near the vineries, I also noted a tolerably-sized, span-roofed house, heated with hot water, which is used as a winter kitchen garden, and is kept at a moderate temperature during that season. Mr. Chaplin told me he found this house uncommonly useful. In autumn he brought in late Cauliflowers, and early Broccoli, which there perfected their heads, and produced dishes of these vegetables during the most severe weather. Pots of various herbs were also brought in; and, when the Broccoli was all gathered, Potatoes were planted, and came in quite early: many other vegetables, so protected, came in useful, let the season be ever so unfavourable. This idea of a winter kitchen garden is a good one; and, as glass and wood are cheap, a large space of ground might be covered, in the ridge and furrow style, for the special purpose of cultivating useful vegetables, under glass, protected from frost and snow.

In the kitchen garden proper, I noticed that the small fruits—such as Gooseberries, Currants, Raspberries, and Strawberries—were more than commonly productive this season. Indeed, I think this is general throughout the country. Apples, Pears, and wall fruit will also, in most places, be plentiful this season, owing, it is supposed, to the warm weather of last year ripening the wood and perfecting the blossom-buds. Even the common Hawthorn and Hollies in our hedges show the effects of a ripening summer; for I never saw them so full of blossoms as I have this spring.

Passing from the gardens, we entered the pleasure-grounds. The walk wound down to the edge of the lake, and was fringed with clumps of Rhododendrons in full flower. One part is in the picturesque style; that is, there is a rockery, a fernery, and some dripping water trickling over part of the stones: there the Ferns thrive most luxuriantly, showing that moisture helps their growth amazingly. Whoever forms a fernery should, if possible, have water near it, to cause a moist atmosphere. I was last week among the hills of Derbyshire, near Castleton, and wherever moisture was, there I found Ferns in abundance. On common stone fences, on the roadside,—where built against a moist bank, shaded from the sun,—the Ferns were plentiful; whilst, on the opposite side of the road, exposed to the sun, and quite dry, not a Fern was to be seen.

An ascending walk, past the fernery, brought us up to the flower garden, near the house. This is rather small, and, I think, ought to be enlarged. The beds had been just planted out in a most judicious manner, just such as would please Mr. Beaton. Mr. Chaplin has evidently studied the effect of contrasting colours; aiming, however, more at variety in each bed, than matching one bed with another. The effect will, no doubt, be pleasing when all are in bloom.

The next place I saw was the conservatory, alluded to above. The blaze of flowers here was quite dazzling, consisting chiefly of Geraniums and Azaleas. At one end there is a blank wall; this was covered entirely with the old *Unique* Geranium. Its neat heads of purple blossoms were very numerous and very effective. The passage leading to this conservatory was planted with the different species of *Ceanothus*, and the wall was quite blue with their balls of bloom.

On the pleasure-ground, after leaving this show-house, I saw a specimen of the far-famed *Wellingtonia gigantea*. It is the finest plant I have yet seen. I measured it carefully; it was five feet high, and the branches spread four feet and a half across at the base. Last year the growth was exactly twenty-five inches. It has been planted out three years, and has never been protected; so that it is undoubtedly perfectly hardy.

To the right of the spot where this *Wellingtonia* grows, there is a walk, which leads to an elevated terrace-walk of some length. This has been formed for the purpose of seeing the fine prospect visible from it. In the foreground, the lovely lake reposes in quiet beauty. On the other side, the country is beautifully undulated; and in the distance is seen the lofty range of hills, one of which rises to a considerable altitude, and is named the Nag's Head, from its fancied resemblance to the head of a horse, and another is called the Cloud.

This terracc-walk should be carried forward in the open park, to command many other pleasing points in the landscape.—T. APPLEBY.

QUERIES AND ANSWERS.

PLANTING IN VASES—IMPROVING A PATCHY LAWN.

“How am I to plant most effectively nine vases, of the size of peck pots, which stand on a wall somewhat exposed to south and south-west winds?”

“How must I treat a bit of patchy, coarse, hard, bad lawn, exposed to strong sun reflexion from water, from this time forth, so as to have it in better order next summer?”—W. A.

[If the vases are deep enough to grow Geraniums, *Tom Thumbs* would tell best above, or level with, the eye, on a wall. Any attempt to put mixed plants in these small vases, for effect, will fail. They are best adapted for spring flowers, such as Arabis, Aubretia, and the like creeping plants; and for very small plants of *Tom Thumb*, in summer.

Keep the patchy lawn closely cut till September; then sow it, and dress it with fine coal ashes, and in February dress again with fine sandy soil and sifted ashes, or any rotten tan; but spud out the coarse tusseky grass, plantain, and other weeds, before the early part of March. Constant (once a week) cutting, and heavy rolling, will improve the coarsest meadow in time. If the roots of the coarsest grass do not get the use of their leaves for a length of time, they will get so weak as to give fine grass; and the very small yellow running Clover is the best plant to give a soft bottom to such lawns. Moss is best, but moss seldom comes with coarse grass.

“Harry Moore's” system of growing scarlet Geraniums is in our 53rd number.]

SPORT IN THE WHITE FOXGLOVE.

“I have in my garden a white Foxglove, which has just commenced flowering for the second year. Last year it was a true Foxglove throughout; but this year I find that a different kind of flower has made its appearance, at the top of the main shoot, very much like a Canterbury Bell. There is another shoot budding, and the uppermost bud seems much larger than the rest, and I think will be the same as the one now sent. Can you explain in your next number the cause of this seeming freak of nature?”—D. DILWORTH, *Newcastle, Staffordshire*.

[This sport looks very much like the flower of a Canterbury Bell. Science can offer no reason for a sport of any kind; but the irregularity of the corolla of this order of plants is proverbial. The *Antirrhinum* and *Calceolaria* are well-known instances of bags and pouches in the corolla; while in *Veronica* we have a symmetrical flower. Preserve seeds from the other flower, and you may have erect Foxgloves to rival the erect-flowering *Gloxinias*, which is another departure from the natural form.]

THE HISTORY AND LITERATURE OF
BRITISH GARDENING.

BY THE EDITORS.

(Continued from page 182.)

CHAP. II.

FROM THE NORMAN INVASION TO THE END OF THE
FIFTEENTH CENTURY.

(1166—1499.)

WE have recorded all that can be stated with certainty, respecting English gardening previous to the Conquest; but, in the absence of positive documents, much of our information is, of necessity, either inferential or conjectural. But, coming now to a period, the account of which has been written, and of which we possess some existing records, we are enabled to ascertain with greater certainty the state of gardening during that period, and to watch, in some measure, its gradual development.

During these periods, marked by a continued series of intestine broils, the continued invasions of the Danes, who finally established their power in the island, A.D. 1017, and who, in their turn, were succeeded by another conquering dynasty in 1066, in the person of William I., horticulture continued unimpaired and silently to advance. Nor is this a matter of surprise; for the Saxons and Danes, when they won a better home than they had left in their native land, came as students in the arts of civilisation, which their successive sovereigns (Alfred and Canute need alone be instanced), used every means in their power to foster and improve. They came not, as did the Caliph Omar to Alexandria, to destroy those acquirements as useless which he did not already possess. That the conquest of a polished nation, by others more barbarous than themselves, is not productive of that lamentable decay of civilisation that at first sight might be apprehended, is further instanced by the result of the conquest of the Roman state by the Goths. The estimable arts of civilisation were prized and studied by the brave and manly nations of the north, whilst the meretricious ornaments spread over them by the effeminate Romans were despised and swept away. It is only a savage, or a bigot, that conquers to destroy; the Saxons, the Danes, and the Goths conquered to improve their own comfort and condition, which alone could be effected by sustaining the superior arts pursued by the nations they overcame.

In the previous chapter, we have noticed the vineyards of the Anglo-Saxons; and the Normans did not decline from this attention paid to the Vine by their predecessors. At Edmonsbury, in Suffolk, the monks of its Monastery planted a vineyard in 1140, and William of Malmesbury, their contemporary, says that vineyards were possessed by barons as well as monks, and that the Grapes of the Isle of Ely furnished wine next best in quality to that from the Grapes of the vale of Gloucester. Among other places, it is evident that Winchester was at a very early period celebrated for its vineyards; for among our most ancient literature are verses allusive to them, and this line,—

“Testis est London ratibus, Wintonia Baccho,”

is quoted by Twynne (*De Rebus Albionis*, 116) in proof that Winton, afterwards named by the Saxons Winchester—that is, the City of Wine—was so called because there was the best vintage in Britain.

Another old monkish verse is,—

“Quatuor sunt Eliæ; Lanterna, Capella, Mariæ;
Et Molendinum, nec non dans Vineam vinum.”

It is translated thus by Ralph Austen:—

“Four things of Ely town much spoken are,
The leaden Lanthorn, Mary's Chapel rare,

The mighty Millhill in the minster field,
And fruitful vineyards which sweet wine do yield.”

Of Canterbury and that neighbourhood, the same author makes the abbot of St. Augustine's say, that their house was formerly not destitute of Vines: and Somner informs us, that, in the year 1285, both that abbey and the priory of Canterbury were plentifully furnished with vineyards.

At Rochester, a large piece of ground adjoining to the city is now called the Vine; another is so called at Sevenoaks, in Kent: this also is the name of the seat formerly of the Barons Sandes, in Hampshire, and now of Mrs. Chute.

At Halling, near Rochester, the Bishop of that see had formerly a vineyard; for when Edward II., in the nineteenth year of his reign, was at Bockingfield, Bishop Hamson sent him thither, as Lambarde tells us, “a present of his drinkes,” “and withal both wine and Grapes of his own growth in the vineyarde at Halling.” Captain Nicholas Toke, of Godington, in Great Chart, in Kent, “hath so industriously and elegantly,” says Philipot, “cultivated and improved English Vines, that the wine, pressed and exacted out of their Grapes, seems not only to parallel, but almost to outrival that of France.”

Of Sussex, Lambarde writes, “History doth mention, that there was about that time (the Norman invasion) great store of Vines at Santlac (near to Battel).” He adds, as to Berkshire, “the like whereof I have read to have been at Windsor, in so much as tithe of them hath been there yielded in great plenty, which giveth me to think, that wine hath been made long since within the realm; although in our memory it be accounted a great dainty to hear of.” He further observes, that some part of the wine was spent in the king's household, and some sold for the king's profit.

Domesday Book mentions at Ragineia, in Essex, one park and six arpenies of vineyard, which, if it takes well, yields twenty modii of wine. And at Ware, a park and six arpenies of vineyard very lately planted.

We hear of vineyards also in Middlesex, Cambridge-shire, at Denny Abbey, the Isle of Ely, at Dunstable, and at St. Edmundsbury, in the engraved plan of which town the vineyard of the abbey is particularly noted.

Within the walls of the city of London there is a street called the Vineyard; and others in the liberties and suburbs, and in Westminster; there are also the Vineyards of Houndsditch and Coldbath-fields.

In the Journal of Works at Windsor, in the reign of Edward III., which is preserved among the Exchequer Records, we find every operation of Vine culture detailed by the keeper of the vineyard at Windsor Castle, from planting, grafting, and manuring, till the pressing of the fruit, the making and repairing of the casks, and the barrelling of the wine. The superintendence of this Windsor vineyard was, for some time, entrusted to one Etienne de Bordeaux, who, no doubt, was brought over from Guienne.

In the archives of the church of Ely is the following register:—

Exitus Vineti	2	15	3½
Ditto Vineæ	10	12	2½
10 bushels of Grapes from the vineyard	0	7	6
7 Dolia Musti from the vineyard, 12 Edw. II.	15	1	0
Wine sold for	1	12	0
Verjuice	1	7	0
For Wine out of this vineyard	1	2	2
For Verjuice from thence	0	16	0

No wine, but verjuice, made 9 Edward IV. Hence it appears plainly that, at Ely, Grapes would sometimes ripen, and the convent made wine of them; and when they did not, they converted their produce into verjuice.

In Northamptonshire, Martin, Abbot of Peter-

borough, in the time of King Stephen, is said expressly, in the Saxon Chronicle, to have planted a vineyard, and it was a large one. Madox, in his History of the Exchequer, writes, that the sheriffs of Northamptonshire and Leicestershire were allowed in their account for the livery of the King's vine-dresser, at Rockingham, and for necessaries for the vineyard.

There are evidences of vineyards still farther north, as at Darley Abbey, in the county of Derby.

In the reign of Henry III., the neglect of vineyards in England is attributed by Twynne in part to that fondness for French wine which then came upon us. In this King's time, about the year 1260, a dolium (thirty-six gallons) of the best wine could be bought for forty shillings, sometimes for two marks, and sometimes for twenty shillings.

This neglect and decrease of vineyards may be traced to the time of Henry II., who had acquired possession of Guienne, in right of his consort, Eleanor of Aquitaine; and the encouragement and protection given to the wines of Guienne and its neighbouring parts, which were all known as Gascony wine, was soon evidenced by our statutes. Thus, by 27 Edward III., cap. 5, it was made felony to forestall or engross this wine, or even to have an agent in Gascoyn, before "the common time of vintage passage;" so, according to the mistaken policy of the period, private energy and enterprise might not have any advantage in purchasing that which was so generally in request.

From the circumstance of the Vine being so much more cultivated at that period than it is now, it has been argued that the climate of this country must at that time have been warmer than now; but a little consideration of the taste and habits of the people will tend to dispel that which has now become a popular error. Verjuice was then used to a large extent, in the soups, sauces, and other dishes; and, while in some seasons wine of ordinary quality might be made, in those seasons that the Grapes did not ripen they at least furnished verjuice, if they did not wine. That the wine made at that time was of inferior quality, is evident from the fact that, as soon as Henry II. acquired possession of Guienne, in right of his consort, Eleanor of Aquitaine, vineyards in this country began to decrease, and wine making to be relinquished, in favour of the superior produce imported from Bordeaux.

We now come to the earliest English author we know of, who has treated on the subject of gardening, ALEXANDER NECHAM, master of the grammar school of St. Albans, at the end of the twelfth century, and afterwards abbot of Cirencester. He was born about the year 1157, and died in 1217. His work, "*De Naturis Rerum*," of which there are two manuscript copies in the library of the British Museum, is a collection of treatises, both secular and theological, many of which relate to gardening subjects; but the work bears every appearance of being, to a great extent, a compilation from the Roman agricultural writers; for he treats of many plants that are only to be found in southern latitudes, and which could not have existed in this country even for one year. He seems to have had some practical knowledge of the subject, inasmuch as he notices varieties of fruit which were then cultivated,—as the *St. Règle* Pear; and he also enumerates Apples, Chestnuts, Peaches, Almonds, and Figs; but when he goes on to mention Citrons, Golden Apples, Oranges, and Pomegranates, our faith fails us, and we are compelled to accept his narration with caution. From him we learn that the process of grafting was then, as now, generally practised; but he makes little mention of the Vine.

(To be continued.)

THE HOUSEHOLD.

STEWED CHICKEN.—Prepare and cut up the fowls, in proper pieces for the table; put into the stew-pan or kettle, with plenty of salt and pepper, to season; add what butter you wish, and a small quantity of saleratus (not enough to discolor) to assist in making it tender, and prevent its rising on the stomach; add only water enough to cook it, cover close, and stew moderately. Turn occasionally, that it may cook and season evenly; when nearly done, remove the cover, that the water may mostly evaporate. If you choose, dredge and boil in some flour. Turn on some sweet cream, boil up and serve. Squirrels are good cooked like the above, omitting the cream.

BROWN GRAVY FOR ROAST FOWL.—Chop the heart, liver, and lights of the fowl; put into the spider with butter, pepper, salt, and a little water. When boiling well, add some sweet cream and boil. Stir it, or it will burn.

BAKED CHICKEN.—Dress the chicken; then make a dressing, with which to fill it, of light bread crumbled fine, a lump of butter the size of a hen's egg, and some pepper and salt: moisten with water. Place the fowl in a pan, with a pint and a half of water, sprinkle a little salt over it, and bake half an hour.

TO CORRESPONDENTS.

PEARS FOR A SOUTH WALL IN TYRONE (*An Amateur*).—Your south wall, thirty yards long, will take six trees, and we would recommend the following sorts:—*Glout Morceau*, *Winter Nelis*, *Beurré Diel*, *Ne Plus Meuris*, *Easter Beurré*, and *Beurré Rance*.

MR. W. TURNER, NEEPSSEND (G. F. P.).—See what we said to another correspondent at page 153.

JOINING SWARMS—FUMIGATION NOT INJURIOUS TO HONEY (*A Constant Reader*).—Small swarms may often be joined two or three together, if they come pretty nearly at the same time; recollecting that the one first lived should receive the others, and the junction be made at night. Otherwise fumigation, or driving, if preferred, may be resorted to in the autumn, the honey taken, and the bees added to a stock requiring numbers. Your plan of a "very small hive," to receive the brood, with another afterwards to be added, for the honey, would end in disappointment, and is contrary to the requirements of bees. The laying of eggs, and the collection of stores, are simultaneous operations. Moderate fumigation has no injurious effect upon honey, but brimstone often leaves an unpleasant odour and flavour.

MINIATURE CACTI (S. N. A. E. W.).—We know of no work giving directions for their culture in such a dwarf form.

ERRATA.—At page 164, in the list of plants blooming at the Royal Gardens, Kew, the following corrections are required:—Cruciferae—*Lunaria*. Rosaceae—*Potentilla Wrangeliana*. Solanaceae—*Physocladia*. Amaryllidaceae—*Pancratium*.

OXALIS CERNUA.—Mr. Beaton returns many thanks to "B. H. H. H." for a large packet of *Oxalis cernua*. They seem to be quite true, although the kind is seldom seen true to name in collections.

NAMES OF INSECTS (F. W. S.).—The grubs which attack the young shoots of the *Pinus insignis*, are the larvæ of *Tortrix* (*Orthotænia*) *Turionana*. As they are now in the pupa state, every diseased shoot should be picked off and burnt, to prevent the moths being developed. In October all the patches of resinous secretion caused by the larvæ should also be collected and burnt. The brown and green beetles have been particularly numerous this summer. They are *Melolontha horticola*, and their habits are similar to those of the cockchafer. Numerous illustrated articles on obnoxious insects will be found in our earlier volumes. Kollar's treatise, translated by Miss Loudon, is also very useful. Also Kirby and Spence's introduction, small 5s. edition, recently published.—J. W.

NAMES OF PLANTS (Granite).—No. 1. We cannot make out your bulb from the bit of the flowering scape sent. Can you send us a bulb that we may bloom it, and see its habit. No. 2. *Ozothamnus thyrsoides*. We fear it is not hardy. No. 3. *Ruscus androgynus*, or Greenhouse Butcher's Broom. (*B. H. H. H.*).—The name of the plant, *Echeveria coecinea*. The *Habranthus* flowering before the leaves appear is no uncommon occurrence, particularly when such plants have been sent from a distance, and have had a good rest by such means; but here the plant is making its leaves, and, therefore, must be watered, and its growth encouraged, as in most cases in this country the plants are evergreen.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 28th, 29th, and 30th, and JULY 1st. SHEFFIELD. Sec., Wm. Henry Dawson, Sheffield.

JULY 8th. PRESCOT. Sec., Mr. James Beesley. Entries close June 26.

JULY 16th. YORK. Sec., Mr. R. Smith, cutler, 10, High Ousegate, York. Entries close July 8th.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.

AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth, Shipley.

AUGUST 28th. HALIFAX AND CALDER VALE. Sec., Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.

OCTOBER 7th and 8th. WORCESTERSHIRE. Sec., Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

WORCESTER POULTRY EXHIBITION.

THOUGH the day is fixed for the Worcester Poultry Show, I have not received any prize list, and, concluding that it is not yet issued, I venture to beg a little space in your well-known pages, for a few observations on the causes to which its want of success and general support, last year, may be chiefly attributed.

The first may be referred to the extreme liberality of its prizes; and the second, to the high entrance fees, viz., 10s. for every pen, including Bantams.

I have before me the Worcester Prize List of 1857, and on comparing it with that of the Crystal Palace, Sydenham, I see that ten classes of the former offer £10 for each of their first prizes, while the corresponding classes of the latter, give only £5, £4, and £3 respectively. This scale enables the Crystal Palace to give three prizes to each of the Gold and Silver classes—Pencilled and Spangled—of the Hamburgs; and also to distinguish the Gold and Silver-laced Bantams, which are confounded in the same class at Worcester.

Allow me, Sir, to enclose to you the Worcester Prize List, on which I have indicated the alterations I would recommend; and the first glance will show you, that, even with the addition of extra classes for colour in the Hamburg and Bantam varieties, my sum total is only £156, instead of £182; and that might be further diminished, if the prizes be arranged according to the scale of the Crystal Palace,—a Show so popular and satisfactory on the whole. I use this qualified phrase because I must add, that I agree with those of your correspondents who urge the claims of Bantams, to receive the same valuable prizes as their larger competitors, or a reduction of their entrance fees.

Having called the attention of your readers to some of the points which appeared to me to injure the success and popularity of several Poultry Shows last year, besides that of Worcester, I leave them to be discussed by abler and more practical pens than that of—A GLOUCESTERSHIRE AMATEUR.

[Our correspondent, well-known as a poultry exhibitor, has evidently well considered the subject, and, in the amended prize list referred to, proposes for

Coloured Dorkings, three prizes, of £5, £3, and £2;	£
White Dorkings, two prizes, £3 and £2	15
Spanish, three prizes, £5, £3, and £2	10
Cochin-China (White, Cinnamon, and Buff), £5 and £3;	
Cochin-China (Partridge, &c.), each £5 and £3	16
Game (Black-breasted and other Reds, and Duckwings, or other Varieties), each £5 and £3	16
Hamburgs (Gold-pencilled, Gold-spangled, Silver-pencilled, Silver-spangled), each £5 and £3	32
Polands (Gold-spangled); Polands (Silver-spangled), to each £5 and £3	16
Polands (Black), to each £5 and £3	8
Any other distinct Variety, three of £3	9
Bantams (Gold-laced and Silver-laced), each £3 and £2	10
„ (Any other Variety), £3 and £2	5
Turkey Poults, and Goslings, each £3 and £2	10
Ducklings (Aylesbury, Rouen, and any other Variety), each £2 and £1	9

£156

Then, our correspondent proposes, that, instead of ten

shillings entrance for each pen, six shillings, and less for Bantams, should be charged. Also, that instead of one admission ticket being given to each exhibitor, these gratuitous tickets should be regulated by the amount of the entrance money the exhibitor pays. We would also suggest that the White Cochin-Chinas should be in a separate class. They cannot be judged satisfactorily in the same class with the Cinnamons and Buffs.—ED.]

WEIGHT OF DORKINGS.

As I see you quote the weight of the largest pen of Dorkings with which you are acquainted, I beg to send you the weight of a pen of single-combed Dorking birds, now in my possession:—Cock, 12 lbs. 3½ ozs.; hen, 9 lbs. 13 ozs.; hen, 9 lbs. 12½ ozs.; total, 31 lbs. 13 ozs. I have a pen of rosy-combed birds of, I think, nearly as great weight.—W. W. H.

BEVERLEY POULTRY SHOW.

You will oblige me by the correction of a mistake by your compositor, in the report of the Beverley Poultry Show, as it appeared in last week's COTTAGE GARDENER. He states that "pen 5 (Spanish), the property of T. T. Pierson, Esq., M.D., of Bridlington Quay, was decidedly one of the best pens we ever remember seeing anywhere." In the MS. report, it was stated, "This pen contained one of the best hens," &c. The report, as printed, would cause readers to wonder why this "best pen" did not figure among the prize-takers; but the fact was, this wonderfully good hen's associates were very inferior.—YOUR REPORTER.

WILD TURKEYS.

WE frequently find wild Turkey nests, and put their eggs under hens to hatch; and, though perfectly gentle while young, they invariably ramble off, if not killed. They will even lead off the tame Turkeys, some of which I have shot wild in the woods. Again, I believe it is a mistake about their being hardier. The wild hen lays her eggs about four weeks later than the tame one; her brood is then hatched when the weather is warm. Besides, the woods are clear of grass and weeds, so fatal to our domestic Turkeys when wet with dew. They are not considered as easily raised here; and I know of no one who will tolerate their crosses here where we know so much about them. I have killed many wild gobblers, and I never found one yet that was mature under five years of age. The length of the beard is generally considered by hunters a very good index to their weight. This has been invariably the case with all I have killed. The heaviest I ever shot was a few mornings ago, which weighed 23½ lbs.; the heaviest I ever heard of being killed was 26½ lbs. I would advise all, then, unless for variety, not to embark in the wild Turkey trade, but, if any one is still so disposed, I can furnish any amount of them at 65 cents per pair.—H. L. B., Fayette, Mo.—(American Country Gentleman.)

YORK POULTRY EXHIBITION.

THIS will be a very well-supported display. Four £5 pieces of plate have been added to its prizes; and Lord Londesborough has become its President.

The day of Exhibition is altered to July 16th, and the day of closing the entries to July 8th.

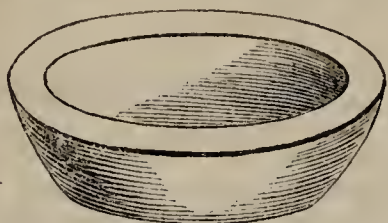
PROLIFIC ROUEN DUCK.—There is a duck, of the Rouen breed, in the possession of Mr. John Parkinson, of Gillington Cottage, Bradford, that has laid 109 eggs in 109 consecutive days; amongst which were eleven eggs, double yolked, weighing 4¾ ozs. each. These have been laid at intervals of about ten days. She still continues laying, with no signs of abatement. The duck is of Mr. Fowler's strain.

PIGEONS.

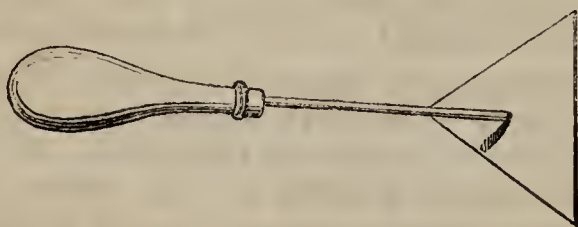
(Continued from page 170.)

MANAGEMENT OF PIGEONS.

A WATER-BOTTLE, or fountain, is also necessary for a supply of clean water, for the Pigeons to drink. These are of various forms, but I prefer those of earthen or stoneware.



Wooden or earthen nest-pans are much used by fanciers for the Pigeons to build in ; but I prefer the nest to be made of well-planed and painted wood, in which the Pigeons build their own nests of heath or birch twigs.



A hoe, or scraper, on a long handle, and a short-handled scraper, with a convex side, for scraping out the nest pans, are also requisites for the well-kept pigeonary.

PAIRING AND BREEDING OF PIGEONS.

To breed fancy Pigeons to a standard of perfection, and to keep the Toys of good feather, some attention is necessary to their pairing, as they should not be allowed to match promiscuously, or, where many varieties are kept, worthless mongrels will be the result.

The first thing requisite, is for the fancier to discriminate between the sexes. A person accustomed to Pigeons will generally distinguish the cocks from the hens, by taking them in his hand and looking at their heads. The cock has a stouter beak, is fuller about the checks, and thicker necked, than the hen ; but, where many sorts are kept, their difference of form makes this a very difficult task, and requires considerable practice to tell the sex at a glance ; though, in a dovecot, where all the birds are of one stamp, it is comparatively easy, as any bird that is doubtful may be put aside at once. Among fancy Pigeons, it, therefore, requires a more certain test. The cock's breastbone is longer than the hens ; her vent bones are set wider apart ; but this, also, varies with age. The coo of the cock is also louder, and more sonorous, than that of the hens, which is shorter, and somewhat hurried in manner ; neither does the hen generally coo so much as the cock. Lastly, their gestures are the most certain signs. Place the doubtful bird in the matching-pen, away from all others, for a few days, till it gets tolerably used to its new abode, which will much depend upon the bird's being wild or tame. Secrete yourself where you may not be noticed, if the bird is wild, but where you can see its manners and movements ; then introduce a merry cock, who will at once play up to the stranger, and, if a hen, she will acknowledge his advances by the twinkling of her eyes, nodding her head, an action of the throat as if swallowing slightly fluttering her wings, and, as she moves before him, making a curtsy, at the same time raising the shoulders of the wings, and slightly spreading her tail. On the other hand, if a cock, a battle will most likely be the result, from which the later-introduced bird generally tries to escape. In this case, remove him, and put in a hen, to which, if he is at all inclined to mate, he will at once play up in a merry tone, bowing his head, sweeping the ground with his spread tail, and sometimes spinning round and round, or jumping after her. The sex being determined, introduce the slide, and place the birds, intended to be coupled, in the matching-pen, one in each division ; feed them well, giving a little hempseed, and allow them to get acquainted, for a day or two ; otherwise the cock is apt to beat the hen too severely, and it sometimes happens the hen will master the cock, in which case pairing becomes a

tedious affair. When the birds are paired, place them in the pen, in the pigeon-house you wish them to take to, and close them in till they are accustomed to it ; or, if it be desirable they should occupy any particular nest, this may be effected by placing them there, keeping them confined to it for a few days, by means of a lattice frame or box, through which they can see the rest of the loft, or house, and learn its position. They may then be allowed to join the other Pigeons ; but, if new comers, they should not be trusted to fly out till they have been allowed to go into the trap for three days, to learn the way in and out, and see its position.

Tame Pigeons may generally be let out with others in three or four days ; but wilder ones will require a fortnight, to wean them from their old abode. Flying kinds are very difficult to settle in a new home.

About a fortnight after pairing, the hen generally lays. When paired, the cock will enter the nest, and, calling in a deep, hollow tone, the hen will join him. Having there coo'd their ideas to each other for a time, till they have come to an understanding, the cock then struts forth, and proceeds to search for materials to build the nest : these he carries in his bill, and delivers them to the hen to dispose of to her liking. As laying approaches, the cock follows his mate with considerable anxiety, driving her from place to place. The first egg is usually laid in the after-part of the day, over which the hen stands at night, and, sometimes, during the day also. Then, omitting one day, the second egg is laid about noon, on the third day, when incubation commences ; the hen sitting from four or five in the evening, all night, till nine or ten in the morning, when the cock relieves her. While she goes out to feed and exercise, he continues to take his turn daily, from nine or ten o'clock in the morning till four or five in the evening. Should the hen be killed, the cock generally forsakes the nest the second night. If the cock is missing, the hen will usually sit for three days, and then give up. The time of incubation is between sixteen and seventeen days, counting from when the last egg was laid. At hatching, both parents are provided, in their crops, with soft meat (*alias* pigeon's milk),—a sort of pap, prepared from the food they eat,—with which they feed their young by taking the young one's beak in their own. The parent retches, or vomits, this soft food into the young one's mouth, which instinctively opens its bill for the purpose, and is thus enabled to swallow it.


The young, at first, are ugly, helpless, almost naked, little things ; but, being kept warm by the parents, and well fed, grow very fast ; and, as they gain strength, the soft meat becomes less prepared, till they receive the food from the old birds almost in the same state as they eat it. The hen continues for some time to brood them at night ; but ere they leave the nest, she is generally occupied again with eggs : hence arises the necessity of allowing each pair a couple of nests, because Pigeons take a portion of the house as their own, and defend it against all comers. Consequently, if the place is over-stocked, frequent quarreling, and the destruction of eggs, and young ones, is the consequence ; while those that are not fortunate enough to obtain lodgings, must drop their eggs on the floor, or in some nest they will not be allowed to tenant.

In breeding fancy Pigeons, great care must be taken to match the birds advantageously, to prevent two individuals with the same fault contracting an alliance, or to prevent incestuous marriages ; for in all Pigeons where size is a desideratum this is of importance ; though in breeding the smaller kinds, as Tumblers, Jacobins, and Turbits, a cross in-and-in is not objectionable, if not carried too far, as it reduces the size, and makes them more delicate, which in these three varieties are considered beauties. Many of these delicate young ones perish from being left too soon by their parents ; to remedy which, fanciers have recourse to shifting, or nurses ; that is, by putting those likely to be left under old birds that have more recently hatched, or under inferior birds, kept on purpose ; by which means the young have the advantage of more brooding and softer food.

High breeding, and stimulating food, have the effect of causing the birds to lay again sooner, but also to neglect their young : hence the necessity of nurses for the more valued breeds.—B. P. BRENT.

(To be continued).

WEEKLY CALENDAR.

Day of Mth	Day of Week.	JULY 6—13, 1858.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon R.and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
6	Tu	Acronychia Cunninghami.	29.735—29.639	67—45	S.W.	.31	53 af 3	16 af 8	morn.	25	4 20	187	
7	W	Actinotus helianthi.	29.957—29.890	65—42	W.	—	53 3	16 8	5 af 0	26	4 30	188	
8	Th	Adenadra fragrans.	29.931—29.866	70—42	N.W.	—	54 3	15 8	36 0	27	4 40	189	
9	F	Adesmia uspellatensis.	29.906—29.868	71—40	W.	—	55 3	14 8	26 1	28	4 49	190	
10	S	Adesmia viscosa.	30.014—29.907	76—53	W.	—	56 3	14 8	sets		4 58	191	
11	SUN	6 SUNDAY AFTER TRINITY.	30.181—30.011	77—46	W.	.01	57 3	13 8	7 9	1	5 7	192	
12	M	Ageratums.	30.296—30.277	86—44	S.	—	58 3	12 8	31 9	2	5 15	193	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 74.4° and 51.6°, respectively. The greatest heat, 97°, occurred on the 9th, in 1852; and the lowest cold, 37°, on the 9th, in 1853. During the period 124 days were fine, and on 93 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ARTICHOKES.—When the heads are cut, pull up, or cut the stalks close to the ground; remove dead leaves, fork up the soil lightly around, and then water and mulch them.

ASPARAGUS.—Clear the beds of weeds, and water, if they are dry.

BROAD BEANS.—If the black fly appears, cut off the parts infested; top the crops coming into flower, and draw earth to the stems.

BROCCOLI.—Prick out from the seed-bed, six inches apart, to grow stocky before they are finally planted, and plant out the strongest of the early varieties, for autumn use.

CAULIFLOWERS.—Hoe between, and earth-up, those that were planted out the latter part of May, or beginning of June; and plant more for coming into use in the autumn.

CELERY.—Plant out the main crops in trenches, a foot deep, with dung at the bottom, which is to be well forked into the soil within the trench.

CUCUMBERS.—Keep up the bottom heat, by linings to the frames; for, however warm the weather may be, this is necessary to procure fine fruit.

GARLIC and SHALLOTS.—When the leaves begin to wither, take up the bulbs, or cloves, and, after allowing them to remain for a day or two on the ground, tie them up in bunches, and hang them in an airy room or shed.

HERBS.—Gather for drying.

KIDNEY BEANS (DWARF).—Earth-up. As their productiveness is much abridged by allowing a few old pods to remain, it is advisable to gather every one, to prolong the produce to the end of the season.

LETTUCES.—Sow the *Paris*, or *Bath Cos*, in drills, where they are to grow to their full size, after a portion is thinned out.

ONIONS.—Thin out, and keep free from weeds.

PARSLEY.—Thin out the early sowings, nine to twelve inches apart, for the *Treble-curved* produce.

PEAS.—Top the tall sorts, and give them a good soaking with liquid manure, to fill the pods.

POTATOES.—Keep them cleared from large weeds, and mulch, if possible, between the rows.

RADISHES.—Continue to sow for succession, in a cool, moist situation.

SAVOYS and WINTER GREENS.—Plant out the largest, and prick out the smaller from the seed-beds, to acquire strength for final and later planting.

SCARLET RUNNERS.—Top, stake, and gather close, as advised for *Dwarf Kidney Beans*.

SPINACH.—Sow for a succession.

TURNIPS.—Sow the main crop, for winter use. Thin out former sowings, to a foot, or fifteen inches, apart.

FRUIT GARDEN.

CHERRY TREES.—Protect from birds; cut back all

superfluous or ill-placed shoots close to the old wood, on walls and espaliers; and shorten back, to one or two eyes, such as are intended for artificial spurs. The *Morella* will require to have the shoots laid in at full length, from three to four inches apart, leaving the shortening of them until the winter pruning.

CURRANTS against walls net, to keep off birds; and a few others, in the open quarters, to be covered with mats, to protect from birds, and to prolong the fruit in perfection.

GOOSEBERRIES.—Thin out the gross shoots in the centre of the trees, to admit the sun to the fruit.

RASPBERRIES.—Clear from straggling suckers, between the rows, to admit sun and air to the fruit, and be careful not to injure the suckers that are to form next year's bearing shoots.

STRAWBERRIES.—Pay early attention, by pegging them down, either in the soil or small pots, if strong plants are wanted for bearing next season.

FLOWER GARDEN.

Look over the beds frequently, to keep the young shoots of *Verbenas*, *Petunias*, &c., neatly regulated and pegged down, until the ground is regularly covered, when greater freedom of growth may be permitted.

DAHLIAS.—Tie up as they advance, removing all buds that show likely to be inferior flowers.

MILDEW.—Whenever it appears, it should be immediately destroyed, by applying sulphur to the plants, &c., affected; first wetting them with water, that the sulphur may stick.

PANSIES and POLYANTHUSES.—Gather as the seed-pods ripen, to be dried in a shady place.

PROPAGATE *Antirrhinums*, *Pentstemons*, *Phloxes*, double-flowering perennials, and other showy herbaceous plants, by cuttings. They take root freely under the shade of a north wall.

ROSES.—Bud in cloudy or wet weather; remove decayed flowers and seeds, and give the autumn-flowering varieties plenty of manure water, to produce vigorous health and abundant bloom. Banish green fly with the engine or syringe. WILLIAM KEANE.

CROSSING LARKSPURS.

After twelve long years, vainly spent industriously inquiring all over Europe, for the old, original, deep-blue, branching Larkspur, I have come to the conclusion that that original kind has altogether disappeared. The best blue I obtained, was from seeds gathered in the south of Spain; but that had a small tinge of the purple, which has spoiled the breed,—such a degree of tinge as one sees in the best white *Horseshoe* Geraniums, in very hot, dry weather. I have a *White Nosegay*, which escaped that slight tinge till the late sultry weather, when I turned it out full in the sun; and one week of it, when the days were at their longest stretch, tinged the edges of the petals with a light pink. I

know not another kind of white *Horseshoe* Geranium that could stand so much.

This pink tinge, on the deep-blue ground of a Larkspur, looks more of a purple, and spoils the blue as much as it does the white flower. Was blue the original colour of the branching Larkspur (*consolida*)? I think not; but that the pink and the white varieties came first, and then the blue from them, as the white came from the pink *Horseshoe* Geranium; there is a constant tendency in the seedlings to revert to the original, or rather to assume a tinge of its colour. One never sees this tinge in the bee Larkspur, if the best blue flowers are marked for giving the seed; but, from bad nurses, all medleys come occasionally.

The *Delphinium grandiflorum*, from Siberia, is the truest, or, at least, the best blue of them all; the new *formosum* is of this breed, the breed of *Delphinium grandiflorum*, or, as we say when many kinds are from one stock, *Delphinium formosum*, and *Hendersonii*, are of the section of *grandiflorum*. It is very curious that *Delphinium Chinense*, the bedding kind, which is of the same section as *grandiflorum*, is liable to the same dirty pinkish tint as the branching Larkspur.

Very beautiful flowers of the Chinese Larkspur were sent to me, this season, from far down in the country; all the blue ones—there were some nearly white—were marked with the pink tinge, which was supposed to come from a cross with *Cardinale* pollen. But Larkspurs are “queer” things to cross: they have three little crooked horns on the top of the seed-vessel, and these are the nurses, the female organs: each of the three has more than twelve stamens to give the pollen. These stamens come up from under the seed-vessel, and they cover the horns entirely out of sight, till most of the pollen is shed. Moreover, the anthers, or pollen-bags, take one week, in dull weather, to discharge their contents, the outer row of them and the farthest from the horns beginning, and so on, till those next to, and overshadowing, the horns are ripe, and shed their pollen last. A very long time, in the life of a pollen-bag, is twenty-four hours, but seven times twenty-four is given to the Larkspur to secure the breed true from stain, and it requires some degree of practice to make one confident of a cross in this family.

I am almost certain that every good seedling which we yet possess in *Delphinium*, has been rather a chance seedling than a cross. If we have a real cross, it is *formosum*, and is from the pollen of *Chinense*, with some good seedling of *grandiflorum*. Now, as both of these are notorious seeders, they may be said to be good for crossing, but, in reality, they are not so. *Chinense* should not become the mother of a cross by any means; she is not true to cast, or in her own offspring; she is of the cast of *grandiflorum*, but has the faulty tinge in some of her seedlings, and her offspring are as varied, in aspect, as those of the human race. Do not trust her, therefore, as a mother of an improved and genuine race, but select her truest blue flowers, and dust their pollen on the horns of *formosum*, and the cross will be more branching than *formosum*, together with a greater degree of longer flowering and less stature,—all the qualities which are most valued in bedding Larkspurs.

The moment the flowers of *formosum*, and of all other Larkspurs, are ready to open, the stamens must be extracted; for the outer row of them bursts on the same day that the flower opens; but no Larkspur is ready for the pollen till the third day after the opening of the flower. When that is comprehended, there is not a flower on earth more easy to cross than a Larkspur. The “spur” is like a French horn, with the wide mouth uppermost, and behind the horns, or pistils; and, if you divest another Larkspur flower of all the parts but the seed-vessel and the stamens, you can put its flower-

stalk down in the French horn, or spur, and that will hold all the stamens right over the pistils, as completely as if the spur was made on purpose for crossing such flowers. One may understand the botheration of dusting one Larkspur flower three times a day, for three days at least, to be at all sure of a cross; but, by the contrivance of the spur, the thing is perfectly certain at one dodge. Put up the head of the stamens for a cross, as soon as the outside ones begin to open, and let them take their chance; some of them will be sure to hit the right time, as there are always twelve chances to one among the Larkspurs to do that, and the spur will hold the stalk of the pollen flower in the highest wind. Therefore, the proceeding is particularly simple when once seen, or practised, but very “queer” indeed in the absence of that knowledge.

So much for gardeners who have done some crossing; for amateurs, add the simplest facts as they occur. Your *Delphinium formosum*, or *Hendersonii*, or any of the race of *Delphinium grandiflorum* is to be crossed with the pollen of *Delphinium Chinense*, in order to subdue the upright habit of *grandiflorum*, and make low branching plants, like *Chinense*, and like them to be continuous bloomers for bedding out. Blue being still our worst habited plants for bedders.

From this time to the end of August, is the best time to get the *Delphinium* crosses; and we shall suppose the amateur to have his *Delphinium formosum*, or *D. Hendersonii*, in full bloom, and also his *D. Chinense*. The first thing is, to cut off every flower that has opened, from *formosum*, and next day to look into the fresh opened flowers,—say, three or four, or half-a-dozen, on the same plant; mark them for crossing that day, and destroy all the flower-buds on that shoot. In the centre of the flower will be seen a tuft, or tassel, of black-headed anthers, on very short stamens, but no pistils or female organs; pull off the black anthers with the finger and thumb, or press the edge of a knife gently against them, and they will drop and leave a close bundle of short white stamens, but yet no appearance of the pistils. Over the bundle of stamens stands a parasol, in two parts, which are fixed to the spur, for the double purpose of screening the stamens from the sun and rain and for collecting the scattered pollen, by a contrivance of minute, silky hairs on the upper surface. But the parasol is not wanted for a crossed flower, so cut it right out, and then you have the tube of the spur wide open at the back of the stamens, just ready to receive the stalk of the flower, whose pollen is to make the cross. Now everything is ready for the three brides; they will appear shortly, in a day or two, according to the weather, after the stamens are taken out. They will be in the centre of the bundle of stamens, and not at all good looking,—only dumpy, little, crooked things, like three little horns. But, as soon as they are in sight, suspend a bundle of stamens of *Chinense* over them, by divesting the *Chinense* flower of all the parts, except the stamens and the stalk; and the stalk is to be thrust down into the tube of the spur, till the stamens are brought immediately over the three horns, when the work is finished.

With conveniences for wintering very delicate seedlings, the seeds from such crosses may be sown as soon as they are ripe, and as late as the end of November. I sowed these kinds of seeds last October and November four times, and once in the first week in December; and I have few “conveniences,” practicality—if there is such a word—serving me in place of hothouses and all the rest of it: I hardly lost one of these Larkspur seedlings, and some of them were in bloom before the end of May. But mine are not crossed seedlings; the idea of crossing them came to me from a duke's gardener this season. I saw the

practice was very curious, and most interesting, and, also, that we should all have a chance of improved new blue bedders from these experiments. Therefore, I studied the family in my dissecting-room, on purpose for this article on crossing Larkspurs; and I can vouch for every item in it to be as true to nature as I have endeavoured to make it simple in practice.

D. BEATON.

SOME SMALL MATTERS IN GARDEN ECONOMICS.

FUCHSIA STEMS AS STAKES.

IN such tropical weather, with thunder-showers falling to the right and left, and leaving one comparatively untouched, gardeners in general will have enough to do, to keep things alive, without having much time to think, and less to write, about matters of great moment. What are mere trifles, however, to many of the readers of this work, are matters of great moment and importance to many others. To a few of these trifles, but which many of those for whom we write find all important, I would devote this gossiping chapter. Among these, small sticks for neat little plants is found to be a great want in small suburban gardens. It is true that sticks neatly made may be bought in plenty; but then our friends dislike those that are painted bright green, as taking the eye to the stake from the plant. They dislike those also that are left white from the plane and the whittle, as also being too glaring. A dark, sombre brown would suit them better. But the chief objection is, that all these sticks are too massive to suit their purpose. They prefer, in fact, something more like a twig than a stake, and as inconspicuous as possible,—such as they might support an *Achimenes* with, for instance, without obtruding greatly upon the eye, or looking clumsy and out of place when seen. The great desideratum is to be able to have these sticks within themselves, and that from something that, whilst it is growing, will yield its complement of pleasure and enjoyment. For mere utility, a small willow-stool ground would be serviceable. For combining the useful and the beautiful, I know of nothing that for this purpose would beat rows or hedges of *Fuchsias*, especially if they had an evergreen background to show them off to advantage. To get these to bloom beautifully, and to produce the greatest quantity of suitable material for stakes, they should be treated much in the way of willow-stools,—be cut down close to the ground after the first sharp frost, and a little longish dung put over the stools. These stools, if strongish shoots are desired, should be pretty well thinned in May. If many small shoots, about half-an-inch in girth, are wanted, less thinning should be given. For sheaves of these neat little shoots, the old *coccinea*, *virgata*, and *Thompsoniana* are best. For strong long shoots, from a quarter to three-quarters of an inch in diameter, *gracilis* and *Riccartonia* are best. The *globosa* and *Buistii*, though they bloom very freely, do not in general produce these shoots long enough for the purpose. I prefer cutting them down after the first sharp frost, as, if the frost is continuous and severe, the shoots will be rendered more brittle, and the bark will be apt to peel off, which is so far objectionable, as it renders the stick more perceptible. If the frost has not been strong enough to destroy all vital action, the shoots should be prepared and dried some time before using; or, when placed in pots, you may get your pots filled with *Fuchsia* roots. Keeping this in view, I know of no more suitable little sticks, for neat small plants, than are thus to be obtained from *Fuchsia* stools. A

small row border, or hedge, would render many a pretty suburban garden independent in this respect; and the trimming them up would furnish nice work indoors in bad weather.

PEGGING DOWN PLANTS IN THE FLOWER-BEDS.

Some ladies, about a fortnight ago, told me, as a great discovery, that nothing equalled disused hairpins. They kept all theirs carefully for that purpose, and they were sure nothing could answer better,—and they could put them in the ground so easily. Certainly, if anyone would kindly give a hundred-weight or two I should have no objection to use them. The first expense, and the chance of losing a great many every season, would be the great drawback. Another party, on witnessing our home-spun, patent mode, had nothing to say in its favour, though I understand they have since imitated what they did not admire; but were loud in praising pegs cut from broken old birch brooms and the tops of pea-stakes. I have nothing to say against either of them; but I should like to see the beds all done before any whittler could make the hooked pegs. All is not gold that glitters. Every improvement, in an enthusiast's eye, may be something absolutely in the way of a sober, practical one. A gentleman sent for me one day, to tell me of a great improvement he had thought of for my water-barrels, namely, the inserting of a tap at the base, through which the water was to come at pleasure. I should have expected the barrel to be half emptied, whilst a man was looking at the water running into the first pailful. Last season I observed, in a shed, a manufacturing of pegs from old brooms, for layering strawberries in pots, and no doubt they answered well. But, supposing that any fastening at all was necessary, the garden must have been peculiarly destitute of little stones, pieces of crock, &c, if a thousand of them could not be collected whilst fifty pegs were making, and which could be applied to the runner afterwards, with much less trouble and time than any peg, however nicely made. Mr. Beaton's patent mode of pegging, by placing a piece of matting round the shoot,—about six or eight inches long,—and then inserting the two ends firmly in the earth, was a great stride in the right direction, and must long remain one of the very best modes for all suburban gardens, where any other mode of pegging could with more difficulty be resorted to. A single mat cut up into strings, of so many inches in length, would furnish an immense number of holdfasts or pegs, when the ends were thus inserted in the ground. Our friend, I know, will pardon me, if I just doubt if his patent mode, though generally useful, be the very best in every case and circumstance. I have tried it pretty extensively here, and—perhaps on the principle that we like our own schemes and plans best—I have fallen back on an old plan, which I have adopted for many years, but which can only be followed by those who can as easily get old or young wood for the purpose. My only objection to the loop of mat fastened in the soil, was the difficulty of getting the fixing done expeditiously and well; and then, as we are much exposed to wind, it often happened that, when wet and wind came together, the ties were loosened from their moorings, and the tops of the plants were swept into bundles of confusion. It is but right to state, however, that our friend's mode stood much better in sheltered places. I found, also, that the men could do the work as quickly by our old mode as by the mat ties, and that it was more durable for the season. Our old patent mode simply consists in turning the summer shoots of trees, and last year's shoots, if not too old to break through, into hairpins as it were. For instance, in the month of June, we thin

out summer shoots of Apples, Pears, Currants, &c. These may be from twelve to eighteen inches in length. We make it a rule to cut none: the knife is held in the right hand, and the shoots caught quickly between the thumb and the blade, and broke over it; and an armful, or sheaf, is thus got, as soon as I can write one of these lines, or sooner. From six to twelve of these shoots are then taken in the left hand, and held by the soft points; the fingers of the right hand are brought down through them, so as to remove all the leaves; the soft points are broken over the knife, and thrown away; and you have young shoots left of from twelve to eighteen inches long; these are again broken over the knife, into pieces of from five to eight inches in length, according to the length of peg required. Each of these pieces is cracked in the middle, but which almost invariably leaves a portion of the wood and bark on one side unbroken: all you have to do, is to place the two ends of this wooden hairpin over the shoot to be laid, and thrust these ends down into the soil.

Though I have mentioned these young shoots, yet we prefer, at an earlier period, winter prunings of last summer shoots, of almost any sort of wood that will not crack quite through, when thus you attempt to break them in the middle. Apple, Pear, Hazel, Maple, any sort of wood, will do for this purpose,—such as points of what are used for pea-sticks, but cut the preceding winter. If older, instead of cracking rather more than half in two, they will break, and therefore be of no use for this purpose. The economy of this mode, as respects labour and time, consists chiefly in breaking all the lengths over the knife, instead of attempting to cut them or point them. The ends have, therefore, a rough appearance, but they go easily enough into the ground, if it is as soft as a flower-bed should be. Sometimes these shoots are taken to the beds of the requisite length; but, more generally, the shoots, as long as they can be got, are taken there in a basket; the workman takes a few in his left hand, and, just as a shoot needs a long or a short peg, the shoot is broken over the knife, cracked in the middle, and inserted. The men who chiefly do this kind of work, say that they can get the wood, and do the work, by this mode, much sooner than they can do the work by the mat strings. Most likely Mr. Beaton's assistants would do it quicker with the mat strings. I certainly prefer these wooden, double pins myself. Observe, that much of the economy consists in *no cutting or pointing*. The late Joseph Knight, Esq., of the Exotic, showed me, that, in making small stakes, there ought never to be more than two cuts of the knife. Only wait to give one, or two, or more cuts to point these patent pegs, and farewell to all notion of laurels. Mr. Beaton's mat-strings would at once reign triumphant. When breaking, instead of cutting, is adhered to, and such shoots can be got without cost, then my present belief is, that this doubling of these short shoots is, altogether, the most economical and enduring for the season. Let it, at least, have a fair trial, and if any correspondent can furnish us with a better and less costly material, I will thank him for the hint, and be the first to adopt it.

SUPPORTING FLOWER-BEDS.

I find I must be brief on this. In sheltered places, many gardeners require no support, even for their Calceolarias, Petunias, Geraniums, and Salvias, &c. In exposed places, even after pegging, and when dripping weather had made the plants grow strong, I have seen the beds blown into wavy bundles; and the bringing of them back was attended with great difficulty, and to the great detriment of the beds. To avoid this, I have seen the beds netted over with fine

cord, supported at a requisite height, through the meshes of which the plants grew, and the wind had but little effect on them. As a more economical and homely medium, I prefer Spruce branches, full of little bits of spray, from which all the green foliage has fallen. Such little bits of twigs, owing to the resin they contain, will last several years. I generally apply them to Calceolaria beds, when planted, and the beds look a little rubbishy at first. The little branches, stuck firmly in the bed, soon get covered, and then the resisting medium to the wind is not seen; even whilst it is seen, I am of opinion that its manifest utility takes away all idea of ugliness. Some low-growing Verbenas do not require anything of the sort, especially if well pegged down. But the stronger growing kinds, and almost all Petunias, even though pegged down, would not be at all secure in windy weather, without this staking the bed, as it were, with brushwood. Of course a little judgment must be exercised in doing this, as the branches should not be so long as to obtrude beyond the flowers, when the plants are about their best. Old brooms, or any other wood, full of spray, would also answer well enough, but I prefer the spray of Spruce, when it can be obtained. R. FISH.

GRAND NATIONAL EXHIBITION OF ROSES.

ST. JAMES'S HALL, LONDON, JULY 1.

THIS new move, for a feast of Roses once a year, in London, has been talked about for the last twelve months. The first experiment of the Rose cultivators—their first exhibition—came off on the 1st of July, and was most successful, as far as “the feast of Roses” was concerned. Everything was managed by the florists; and no set of men on earth can manage the details of a Show better than they can.

The first person I spoke to in the Hall was Dr. Lindley, and if he was twenty years younger he would die a florist, as sure as fate. He was in ecstasies about this wonderful exposition of the Rose world, and said he could hardly keep his own Rose trees alive, much less look for Roses. The greatest wonder of all was, that the great Rose growers near London were within an ace of being thoroughly beaten by a young Narcissus from a distant province.

Mr. Rivers put up a grand display, in his best style, for pot luck, to the admirer of Roses. For him to exhibit out of his own grounds is like coming down from the top of Olympus, and to compete in his own empire would seem to look like admitting a division of power; therefore, like Mr. Veitch and the Horticultural, his contributions were for the benefit of the new movement, and not for competition.

Mr. Paul came out first-rate, and carried the highest award of the day, but only by the turn of a die, and being judged by florists, who stick to their last to the letter of their own law. Gardeners would have awarded the first prize to Mr. John Cranston, King's Acre Nurseries, near Hereford. But to have won the second best prize at such a gathering, is of itself sufficient to put Mr. Cranston up into the highest degree in the peerage of the “Rose Court.”

Mr. Francis was only one degree lower than these; but Mr. Lane, like the Doctor, has been so overtaken by the heat and drought, that he could not compete.

The large collections were put up in three Roses of a kind, with the Rose buds, and they numbered from 100 to 125 or 130 blooms in each. The smaller collections of twenty-four kinds were made up of a single Rose of each; and here Mr. Cranston was first, with the finest Roses ever seen in London, and some of them quite new,—as *Lælia*, the largest Rose in the Hall, a splendid flower of a true rose-colour. His

Lord Raglan was more like a *Camellia imbricata* flower, only the colour is of the darkest crimson, like *Suchet*.

But let us have the twenty-four names exactly as they stood in two boxes, reading them off like reading a book:—*Madame de Cambecères* (large, deep rose), *Caroline de Sansal* (light flesh, fine), *Duchess of Norfolk* (dark), *La Fontaine* (rosy red, and one of the very best), *Souvenir de la Malmaison*, *Souvenir de Leveson Gower* (a charming deep-red rose), *William Griffith* (a favourite), *Devoniensis* (ditto), *Prince Léon* (a rosy crimson), *Eugene Desgaches* (Tea, large pale rose), *Boula de Nantcuil* (one of the best of the old dark French or Gallic Roses), *Madame Andry* (another charming light crimson), *Louis Perrony* (an universal favourite), *Jules Margottin* (a splendid flower, of a glossy pink colour), *Lælia* (the largest Rose ever exhibited, a rich rose colour), *Lord Raglan* (one of the very finest, and very dark), *Souvenir d'un Ami* (Tea, a favourite with all growers), *Gloire de Dijon* (one of the best of the Tea Roses, a fine light buff), *Docteur Leprestre* (a Bourbon, another splendid crimson), *Madame Vidot* (one of the finest shaped among the Hybrid Perpetuals, and a match Rose to *Madam Rivers*), *Victor de Trouillard* (purplish crimson, fine), *Souvenir de la Reine* (carmine), *Cloth of Gold*, and *Alexandrine Bachmetoff* (a splendid deep-coloured Rose).

In the first prize collection by Mr. Paul, I noted *Triomphe de Rennes* (a yellow Noisette), *Général Castellane* (a fine-shaped dark crimson), *Madame Vidot* (a light flesh, and one of the best), *Mdlle. Alice Leroy* (a peach blossom-like Rose, fine), *Madame de Manöel* (a splendid shining Rose), *Cloth of Gold*, *Monsieur Ravel* (would match *Paul Ricaut*), *Victor Trouillard* (a fine dark crimson), *Madam Hardy* (looking more like *Madame Plantier*), *Duchess of Norfolk* (very good), *Lord Raglan* (extra splendid), *Auguste Mié* (very fine), *Helen* (one of his own raising, a fine blush, a dark seedling), *Général Jacqueminot* (the highest coloured of all the Roses), *Général Pélissier* (near to *Madame Vidot* in colour, a fine Rose), and *Joan of Arc* (a light salmon-colour).

A large collection from Messrs. Veitch, of Exeter, missed a prize. But there were some splendid Roses in it; such, for instance, as *Lord Raglan*, *Charles Lawson* (lake colour, very fine), *Madam Rivers*, *Triomphe de Rennes*, *Gloire de Dijon*, *Village Maid*, and *Crested Province*, alias *Crested Moss*.

In the class of Tea and Noisette Roses, Mr. Francis was first and Mr. Paul second. The former had a large white and very double Noisette, called *Madame Deslongchamps*, far above *La Biche*, and more like a Sempervirens than a Noisette. Also *Jean Desprez*, *Bouche*, *La Pactole*, *Eugene Dubourg* (a fine flesh Tea Rose), and *Cloth of Gold*. Mr. Paul had *Miss Gray*, but whether it was *Isabella Gray*, the yellow American, I could not make out. It was a poor starved specimen of the *Miss Gray*.

Mr. Paul was first in a collection of Moss Roses. Mr. River's collection was in twenty or more boxes, and in some glass cases. They made the circular sweep round the front of the orchestra, in a double row, and had a splendid effect. But this fine collection was ill dealt with in the arrangement. The central table came up close to it, and cut it in two. Then, after seeing the one-half of Mr. River's collection, one had to go round the table, and see three or four thousand other Roses, before coming to the other half of the Sawbridgeworth collection. The circle will be the death of the florists in the long run; but to run the circle of the Hall, to get at Mr. Rivers half-circle of Roses, will be the death of me; and, if they do not slacken the reins, I, for one, will never engage to run the risk of my health and limbs for all the florists in

the world—good luck to them. I hope the Council of the Horticultural Society will have these tables in November as they had them in April last, and not follow the fashion of these tight-laced gentlemen.

Mr. Rivers and Mr. Cranston exhibited beds of particular Roses, as I want bedding plants to be competed with; that is, a box of a kind. Mr. Rivers had a box of *Paul Ricaut*, and one of *Prince Léon*, the most perfect Rose in all the Hybrid Perpetuals. In the centre of his lot was a box of *Lord Raglan*, and one of *Madame Vidot* at the farthest end. The four boxes were covered with glass, and the sight was most charming.

Mr. Cranston had similar boxes of *Géant des Batailles*, *Jules Margottin*, and *Général Jacqueminot*.

Mr. Rivers had *Perle des Panachers* (a Gallic Rose, like a light Picotee Carnation), *Œillet parfait* (also a Gallic Rose, like a deep-coloured Picotee), and another Gallic one, called *D'Agnesseau* (a large fine crimson). In his Sempervirens class were *Spectabile* (a small deep-salmon flower), *Myrianthes*, *Rampant*, *Princess Louisa*, and *Adelaide d'Orleans* (all more or less white, and large cluster), *Striped Unique* (a singular-looking Rose), *Gloire de France* (a deep crimson Hybrid Perpetual), *Le Lion des Combats* (a fine dark), *Comte de Mantueil* (a deep Rose), *Madam Rivers*, *Général Bedeau* (a beautiful carmine), *Alexandrine Bachmetoff* (excellent shape, and deep red), *Duchesse de Cambecères* (a fine rosy flower), *Adelaide Fontaine* (a bright salmon), *Emperor Napoléon* (dark, in the way of *Suchet*), *Mathurin Regnier* (in the way of *Madame Vidot*, a splendid Rose), *Arthur de Sansal* (dark as *Suchet*), *Mère de St. Louis* (lighter than *Auguste Mié*, and that way). Among his Tea Roses were *Josephine Matton* (splendid in the opening bud), *Madame Willermoz*, *Niphetos*, *Adam*, and others.

Mr. Cant, of Colchester, had a second prize for a fine lot of single Roses. Our friend, Mr. Terry, was very successful among private growers, but they were too numerous for my pencil; and the published lists of the Society, which I could not obtain at the time, must supply the names, and the different degrees of success.

There were two huge devices, and some excellent nosegays, made entirely with Roses, and most tasteful they were. The Hall was crowded, and ladies were industriously noting the names; but I was compelled to leave the Hall early in the afternoon, being almost stunned with the horrid noise and jingling of the band, which had no sort of business there, but to satisfy a cockneyfied taste for outlandish noises.

D. BEATON.

MEETING OF THE BRITISH POMOLOGICAL SOCIETY.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held on Thursday, June 24th, at St. Martin's Hall, Long Acre, the Rev. REGINALD CHANDOS POLE, in the chair.

JOHN NOBLE, Esq., of Westbourne Terrace, London, was elected a Member of the Society.

A letter from Mr. JOHN SPENCER, desiring to relinquish the office of Secretary, after the termination of the present year, was read, and was ordered to be brought forward for consideration at the next meeting.

A number of Seedling varieties of STRAWBERRY were exhibited by Mr. MYATT, of Manor Farm, Deptford, amongst which—No. 1, described as a Seedling; first fruited in 1856, hardy, and coming into use; about half-way between *Keens' Seedling* and *British Queen*; was a firm, well-coloured, medium-sized fruit, generally flatly ovate in form, with deep seed indentations; and, from a plant exhibited, appeared to be of robust habit;

leaf resembling *Keens'*, and an abundant bearer. It had not, however, any flavour which could qualify it for a dessert fruit, but it was considered that, if hardy and an abundant bearer, its firmness might render it useful for market, and its agreeable sub-acid would make it suitable for preserving purposes. It is as desirable to have a succession of good preserving kinds, as of good dessert varieties; for, in large gardens, if a single variety is depended upon for preserving purposes, the fruit may ripen at an inconvenient time, or be destroyed by heavy rains. It is, however, necessary, that more be known of this variety before the Society can pronounce decisively concerning it.

No. 13, said to be raised from *Myatt's Eliza*, and first fruited in 1857, and in season nearly as early as *Keens' Seedling*. The fruit very much resembled its parent in form and colour, had a delicate aroma, and in flavour seemed to be a combination of *Eliza* with *Hautboy*. It was considered desirable to request Mr. Myatt to give the Society future opportunities of discussing the merits of this variety.

The other varieties, which were ripe, did not exhibit any properties worthy of notice; but some very late unripe varieties, of which plants, in pots, were exhibited, gave promise, by their lateness, productiveness, and general habit, of being worthy of future consideration.

Several lots of APPLES were sent, but all too far gone, excepting one variety from Dr. DAVIES, of Pershore, called the *Rushock Pearmain*, and described as a good bearer and strong grower. The fruit is medium-sized, oblate, pale lemon colour, very much streaked and blotched with light brown russet. Although somewhat shrivelled (which appeared the result of protracted keeping), the best specimens were tender and juicy, with a nice delicate flavour, and slightly aromatic when cut. The variety was considered worthy of bringing into notice. It is thus described in Mr. Hogg's *British Pomology*, page 176:—"Fruit, rather below medium size, two inches and a half wide, and the same in height; conical, even and handsomely formed. Skin, of a fine deep yellow colour, almost entirely covered with cinnamon-coloured russet, with a brownish tinge on the side next the sun. Eye, large and open, with broad, flat segments, which generally fall off as the fruit ripens. Stalk, a quarter of an inch long, stout, and inserted in a pretty deep cavity. Flesh, yellowish, firm, crisp, and juicy, with a brisk sub-acid, and sugary flavour. An excellent dessert apple, of first-rate quality; it is in use from Christmas to April. It is frequently met with in the Birmingham markets. This variety was, according to Mr. Maund, raised by a blacksmith of the name of Charles Taylor, at Rushock, in Worcestershire, about the year 1821, and is sometimes known by the name of *Charles's Pearmain*." A drawing of it is in "Maund's Fruitist," 70.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE anniversary dinner of this Institution took place on Wednesday last, at the London Tavern, H. Pownall, Esq., presiding, in the absence of Lord John Russell, who was prevented attending in consequence of an invitation to dine with Her Majesty. The Chairman was supported by Sir Joseph Paxton, Alderman Mechi, Colonel Wood, H. G. Bohn, Esq., Messrs. Cutbush, Veitch, Low, Lee, &c.

The room was tastefully decorated with flowers, the principal table being backed up with a magnificent display of Geraniums, contributed by Mr. Turner, of Slough. The gallery, at the end of the room, was filled with ladies, each in possession of a bouquet of choice flowers.

The dinner having been done justice to, the Chairman proposed the health of "Her Majesty;" and in doing so adverted to the absence of Lord John Russell, which, however much

they might regret, he was sure those assembled there were too loyal to murmur at. The "Prince Consort, the Prince of Wales, and the rest of the Royal Family," "The Army and Navy" (responded to by Colonel Wood) followed, and were drank with due honours.

The Chairman, previous to giving the toast of the evening, paid a feeling tribute to the memory of one who had departed from amongst them, and who, in his time, had done so much for the advancement of the science of gardening—the late lamented Duke of Devonshire. In proposing "Success to the Gardeners' Royal Benevolent Institution,"—"He trusted that, in the absence of Lord J. Russell, whose place he felt himself inadequate to fill, those gentlemen assembled round him would feel it more than ever their duty, to come forth liberally towards the funds of the Institution, so that he might go away with the pleasing conviction, that those funds had not suffered from his feeble advocacy. Through the beneficial influence of an Institution like this, those who had worked hard with hand and head, to produce luxuries of which they seldom partook, were enabled, when, through misfortune, poverty overtook them, to receive some alleviation of their sufferings."

Alderman Mechi then proposed the health of "The Chairman," to which H. Pownall, Esq., duly responded, in turn proposing "The Vice-Presidents."

Sir Joseph Paxton, in reply, said, "He believed that gardeners were the most neglected servants in any nobleman's or gentleman's establishment. There were, of course, some bright and honourable exceptions, but it was a melancholy reflexion, that the vast majority of those who were the means of producing so many luxuries, received wages so low, as scarcely to enable them to obtain the necessaries of life, much less to provide for the time when old age and misfortune overtook them." After adverting to the progress in the art of gardening during the last twenty years, he expressed his firm conviction, that "agriculture was 100 years behind horticulture." In conclusion, he proposed the "Health of the worthy Treasurers" (responded to by Mr. R. Wrench), and trusted the company assembled would liberally respond to the call which would be made upon them.

The "Health of their esteemed Secretary, Mr. Cutler," through whose untiring zeal and energy the Institution was in its present condition, followed, and was suitably acknowledged. "H. G. Bohn, Esq., and success to Horticulture and Literature;" "Alderman Mechi, and Success to Agriculture," in replying to which, the worthy Alderman expressed his concurrence in the remark which fell from Sir Joseph Paxton, respecting the backwardness of agriculture in comparison with horticulture. "But, if horticulture had made great progress during the last few years, so had agriculture; and he trusted the day was not far distant, when that which caused Father Thames to be in such ill odour now might be applied to its proper use, the fertilising of the land. He, himself, was firmly persuaded that there was room for the profitable investment of one hundred millions of money, for the improvement of agriculture in this country."

"The Trustees and the Committee," to which Mr. Lee replied; and last, though not least, "The Ladies," to whom a touching appeal was made by the Chairman, calling upon them to use their all-powerful influence in securing contributions and annual subscribers.

The amount collected exceeded £300.

Mr. Harker acted as toastmaster. The musical arrangements, under the direction of Mr. T. Knowles, gave entire satisfaction.

THE MINIATURE GREENHOUSE.

"Is there a book that will tell me how to grow those tiny Cacti, and other plants, I see in the shops in Regent's Street? If not, will you kindly inform me in your next number how to manage them?"—S. N. A. E. W.

A correspondent has sent the above queries, and, thinking many of the readers of THE COTTAGE GARDENER are desirous of some information how to manage these interesting liliputian plants, as well as our correspondent, I shall endeavour in this paper to give a few hints how to cultivate them successfully. Certainly, they are tiny little fellows, and deserve, in some degree, the term that has been given to them, namely, Baby-garden Plants. From what I can learn, the original

plants first so grown were imported from Germany. A very few species were first grown in this way; but from their prettiness, if I may coin such a term, they are now grown in considerable numbers, and displayed in shop windows in Regent Street, and other places, in London, proving that the smoke and dust of a large city has but little effect on these pigny plants. There are a large number of what old gardeners called dry stove plants, that may be grown in this style successfully, and be a source of innocent pleasure, and, possibly, a great relief to many a victim of lingering ill health. And if, by watching the slow progress of the growth, and, in some cases, flowering of such plants, the mind of an invalid can be diverted occasionally from dwelling upon the pains and languor of a diseased body, the culture of them will have been of some use. Many a young miss—or master, too—may, perhaps, be led into the love of plants, and their minds biassed in the right direction, if they have some tiny plants of their own to cultivate and care for. The love of any of the productions of the Almighty has always a tendency to draw the young from evil, and may possibly bring forth the germ of a budding botanist, or a good cultivator of plants. One proof that such happy effects may be the result of putting it in the power of a young person to cultivate a tiny garden, now lies before me in our correspondent's queries. He is evidently young, and, having noticed and been pleased with what he saw in a shop window, is desirous to know how he may manage such plants himself. And, no doubt, there are many of the rising generation around us who have the same desire; such should be encouraged to follow the bent of their inclination, and thus be led to "love that which is good, and hate that which is evil."

Having introduced my subject by the above preliminary remarks, I now address myself to answering the queries of our correspondent. The first is easily disposed of: there is no book published as yet on the subject. The second, "How am I to manage them?" may, for the sake of perspicuity, be divided into—1st. The kinds of plants suitable for the purpose. 2nd. Propagation. 3rd. The soil they require. 4th. Pots and potting. 5th. Where to grow them; and last, Their management in summer and winter.

The kinds of plants suitable for the purpose our correspondent alludes to are the CACTI,—a general name, expressive of a class containing many sub-genera, each again divided into the species belonging to it. From this class a large number of species may be selected, that will answer admirably for the miniature greenhouse. They are well adapted for the purpose, because of their slow growth, and the small quantity of soil necessary to keep them just growing: hence they may be kept in small pots for many years. Many of them are found in the hottest parts of the globe; yet, in culture, we find they will, if kept dry both at the root and in the air, bear a very low temperature, providing it is not actually frosty. They, as a matter of course, will bear the hottest of our summer days, fully exposed to the sun; but then is the time they require a large supply of moisture at the root, and they are even benefited by exposure to the genial rains of that season.

The next great tribe of plants, that may be subjected to this treatment, are the MESEMBRYANTHEMUMS,—a long word, I fear, for our young gardeners, but not difficult to pronounce if the stress is laid upon the centre syllable. We have not an English name for this tribe, unless we call them, as is sometimes done, the *Fig Marigolds*. These are even easier to cultivate than the Cacti, for they are hardier, and not so subject to damp off in winter. Many of the most suitable kinds, in this class, have not as yet been used for this purpose, chiefly, I suppose, because they are not generally grown, excepting at Kew and other botanic gardens; yet they are so easily propagated, that I am somewhat surprised nurserymen do not cultivate them for this especial, as well as more general, purposes.

The DWARF ALOE, now known under the name of *Ha-worthia*, is also a genus that contains many neat, small plants that do well in small pots. The Mesembryanthemums and the Aloes are all from that prolific region for plants, the Cape of Good Hope, and are, consequently, pretty hardy for a window or tiny greenhouse. Many amateurs, possessing only a small greenhouse, attempt to grow such plants as Heaths, Epacris, and other similar plants, with very indifferent success; whereas, if they would procure and grow such plants

as I am now describing, as fit for the tiny garden, they would succeed well, with half the amount of labour and anxiety they bestow upon plants that are almost sure to disappoint them.

CRASSULA.—This large genus affords a considerable number of species, very well adapted for the miniature greenhouse, and equally as easy to cultivate, providing the management I shall hereafter describe is attended to. From this tribe many of the tiny plants are drawn that we see in the windows of confectioners and others in the metropolis. This genus is also nearly hardy, the species being for the most part from the Cape of Good Hope. The plants in it are very easily propagated by cuttings. I would just as soon have a cutting as a rooted plant, for they strike as easy as Willows, only let the cuttings dry for a few hours before inserting them in the pots.

SEDUM.—There are a few species of this tribe that may be used with advantage, to grow in small pots, and they are easily procured, because many of them are natives of our rocks and walls in this country. They are the tiniest of all the plants I have mentioned for this purpose: hence they may be grown in pots one inch wide and one inch deep.

SEMPERVIVUM.—That these plants are easy to grow is expressed in the name. It is derived from *sempervivo*, to live for ever; so tenacious are they of life, that I have had specimens alive for nine months without either earth or water. Many of the species are found on the Canary Islands, and some few at Madeira. Some of the larger species may be dwarfed in the Chinese style, by cramping at the root, and by drought. No people are more ingenious than the Chinamen in making dwarf plants. I once saw an Elm tree, more than forty years old, that was not half as many inches high. It was growing in a large shell, and was a truly singular object, though far from pleasing.

There are some smaller tribes that furnish a few plants. I shall, if all be well, give a complete list at the close of my paper on this subject, from which my young friends may select any number they may wish to grow.—T. APPLEBY.

(To be continued.)

BEEES IN AUSTRALIA AND NEW ZEALAND.

CAN any of your readers inform me where I can procure a copy of the Rev. Mr. Cotton's observations on bees, written and published by him during a residence in New Zealand, or, as it is now more correctly written, Zealandia? It has been affirmed that this tract was the first production of the native press of that country; and is alluded to, though rather sneeringly, in Mr. Charles Hursthouse's recent work on Zealandia. I have no doubt that many of your apiarian readers have been looking for some communication from our old friend, "A COUNTRY CURATE," on the bees of Australia and Tasmania, and the progress of apiculture in those regions. I think the information he, no doubt, has it in his power to give us, "who stay at home at ease," would be extremely interesting.—T.

[We shall be much obliged by information in reply to our correspondent. We see, in "The New Zealand Emigrant's Bradshaw," it is stated, "The common bee, introduced with extraordinary success, now frequently swarms in the woods, and here and there stores a tree with the finest honey."]

THE WILD RASPBERRY.—The Raspberry is found wild very commonly in Scotland, but less so south of the Tweed. It delights in the northern woods, or in the stony margins of mountain torrents; when in blossom and dried, it makes a very pretty specimen. By the stony margins of some of the Scottish lochs the wild Raspberry is found in great perfection. It used to grow profusely, and may do so still, by the bank

"Of sweet St. Mary's,"

in Selkirkshire,—a lovely sheet of water, which lies embosomed amid the pastoral hills of what are sometimes called the Southern Highlands, and which used to be a favourite haunt of Scott and of Wilson, and was of Eliot Warburton, just previous to his last and fatal voyage.—*Wild Flowers*, by Spencer Thomson, M.D.

RESULTS OF TEN YEARS' BEE-KEEPING.

As a pendant to seven years' bee-keeping, let me give you the results of ten years with a single stock. The bees are in a little room, or dressing-closet, adjoining a study on the chamber floor, and about twelve feet from the ground. The stock is in a large straw hive, on a table the height of the window-sill. In front of the hive is placed a box. The bees light on the window-sill, pass through a passage under the window-frame, through the box, into the hive. Very early in the summer, they begin to make honey in the box, the stock being never touched. When sufficient honey is made in the box, it is removed, and another put in its place; this is left until the following summer. The bees have never swarmed these eight years. The stock has always had food enough, and the yield of honey has been about as follows:—

	Weight of comb.
1847	28 lbs.
1848	30
1849	32
1850	14
1851	32 $\frac{1}{4}$
1852 no entry, and, I think, no honey.	
1853	6
1854	none.
1855	28
1856	23 $\frac{1}{2}$
1857	22 $\frac{3}{4}$

Supposing no comb to have been taken in 1852, the ten years 216 $\frac{1}{2}$ of comb.

This year they seem to be making an unusually large quantity in the box. Doubtless, other plans may give more honey, but this is perfectly simple. Nothing to be done but to replace one box by another once a year, and to pay a little attention to the ventilation.

As before stated, they have never been seen to swarm, have never been fed, and the straw hive has never been touched.—TYRO.

[These results are exceedingly interesting and satisfactory. The average produce is good in a stock of ten years standing, and the plan is simple, but, in *careless* hands, would not be always successful. We wish our correspondent had stated the *dates*, yearly, when the empty box was substituted for the full box, for such dates are very desirable to be known. We should like to be informed, also, as to the exact size and form of the box; the height and diameter of the straw hive; and whether any, and if any, how much *brood comb* occurs in the box. We presume the locality is good for bees, and where few are kept. We hope others will try the plan, and inform us of the results. Good ventilation must be needed, in *winter* especially, or dysentery would occur among the Bees. We have known this disease prevail, where hives were thus placed at a distance from the outer entrance.]

THE FRESH-WATER AQUARIUM.

(Continued from page 193.)

ROCKWORK.

OBJECTIONS have been raised to the introduction of stone-work, in a fresh-water collection, on account of its unnaturalness. But, at the bottom of both river and pond, we find arches and caves, produced by intersecting stems of the larger water plants, gnarled and crooked Willow-tree roots, &c., forming grottoes, and twisting passages, amid which the fish delight to gambol; and, as such matters would decay, and thus pollute the water of our tank, we advise a judicious arrangement of rockwork, which adds much to the general effect of the aquarium.

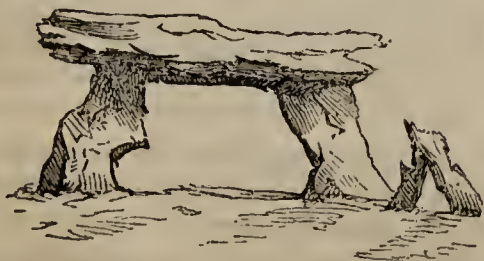


Fig. 1.

Fig. 1 represents a *cromlech*, formed of rugged pieces of some unmetallic rock, carefully cleaned, and firmly placed.

Figs. 2 and 3 are arches, whose construction is as follows:— Take a sheet of clean paper, and on it sketch the proposed rockwork, full size, as seen from the front. Place the drawing,



Fig. 2.

face upwards, on a flat table, and cover it with a piece of glass. Procure from a brickfield some blocks of "run bricks," otherwise "clinkers," or "burrs," being careful that they contain no metal of any sort. Break up the clinker into jagged pieces with a strong hammer, and arrange on your glass, in accordance with the outlines of the drawing underneath. Then



Fig. 3.

mix up a saucer of good *Portland* cement, and fill in between the joints of the rockwork. Leave it four days, at the end of which time the construction should be capable of removal in one solid piece. Now sprinkle the whole of the arch with water, and place in a vertical position, the lower part only resting on the glass, the back being supported. Then, with a little stiff cement, form spreading bases for the feet of the arch, and add pinnacles, &c., to fancy, on the abutments. When set, the arch should stand compact and firm, and after three days soaking in clean water, is fit for placing in the tank.

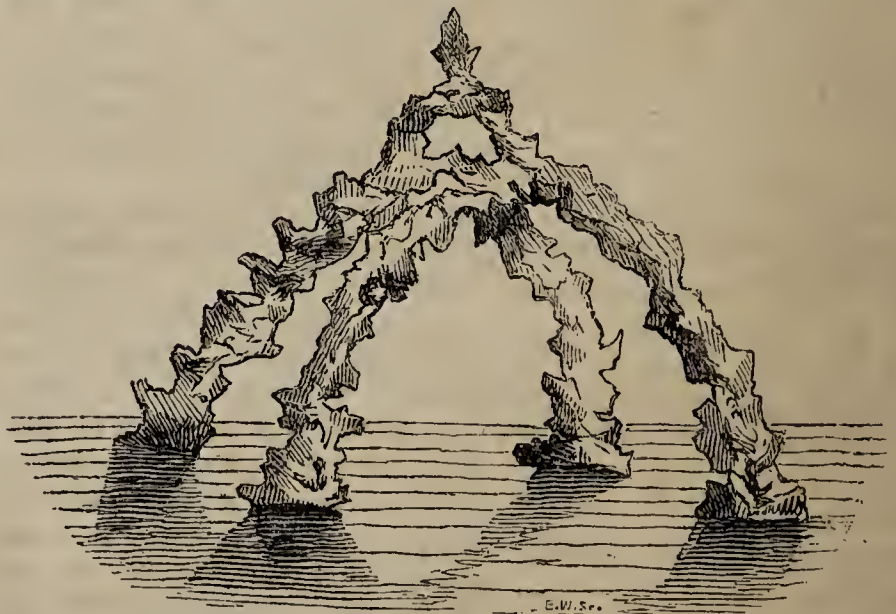


Fig. 4.

Fig. 4 is made by arranging intersecting semi-circles of cardboard, by which the cross arches are kept in position. It is built up with *Portland* cement and clinker work, as in the previous case. When the cement has hardened, the cardboard can be removed with ease, the bower being perfectly solid throughout. The fish seem particularly to enjoy darting in and out, and chasing one another through the openings. Indeed, this arrangement answers a similar purpose to the hoop in the cage of a parrot, or the revolving wheel of the domestic squirrel.

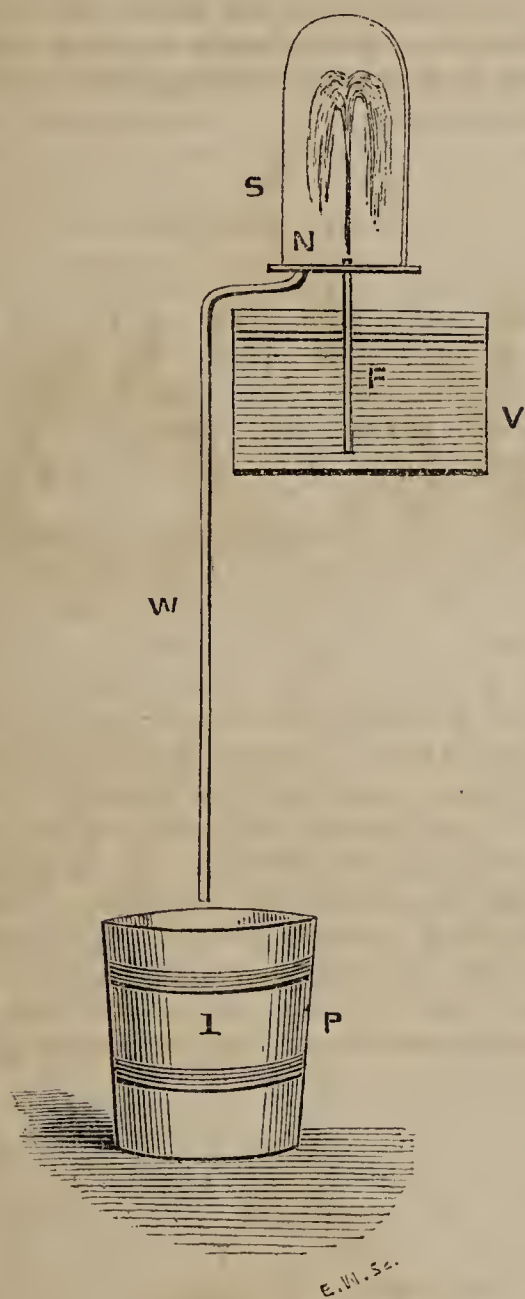
FOUNTAIN.

A small fountain forms a very ornamental addition to the rectangular aquarium. But the difficulties attendant on the ordinary arrangement, which necessitates a high-level cistern, and involves expense in laying on pipes, to be afforded only by a few, lead us to prefer a more simple arrangement, whereby all splashes, which often prove so injurious to window curtains and dresses, are avoided.

The fountain engraved herewith, is on the principle of the syphon, and by its means a jet of water is obtainable *above the level of the supply*, which is direct from the tank.

In a model lately constructed, with a gutta percha quarter of an inch waste pipe, four feet in length, a one-sixteenth of an inch jet, from a quarter of an inch pipe, remained playing steadily, at the height of twenty inches above the surface of the supply.

The annexed diagram represents the syphon fountain, as available in the case of an ordinary aquarium.



s. Is an ordinary glass-shade, affixed air-tight to a slab of metal, or prepared wood.

N. The fountain nozzle, joining to

F. The flow-pipe.

V. The supply reservoir, or aquarium.

W. The waste-pipe, discharging into

P. A concealed pail, or other vessel.

To start the water, draw the air from lower end of W.

Supposing the length of the waste, namely, the height of the tank from the floor, to be four feet, a good jet is obtainable with pail on the floor level.

When the hot weather has set in, we seem to value the sight of a stream of running water; and this same principle is equally adaptable to a table fountain.

Let us take heed that, while enjoying the rippling of natural waters, we do not forget "the fountain opened for sin, and for uncleanness."—E. A. COPLAND.

FAILURE OF ROSE CUTTINGS.

IN the second week in June I put some Rose cuttings into four large flower-pot saucers, filled with sand and leaf mould (three parts sand and one part mould), and then plunged them into a hotbed, in which there was a gentle heat.

I have kept them well watered, and have closed the frame altogether at night—only giving air during the day. I am now afraid that I have treated them improperly, as they are almost all without leaves, although the stems look green and healthy. Is this right? Will you, also, tell me how I am to know when they have struck root? and how I am to treat them after they have done so? You will, I hope, excuse my troubling you, as it is my first attempt to strike Rose cuttings; and I am going to put in some more as soon as I hear from you whether I have managed the first batch properly. I ought, perhaps, to mention, that the cuttings were taken from perpetuals,—such as *La Marque*, *Souvenir de la Malmaison*, *Géant des Batailles*, &c.—AMATEUR.

[Your Rose cuttings were too young for a first attempt by a beginner; and the heat was too much, in the absence of sound practical knowledge of the subject. Still, *La Marque* and the *Malmaison* Roses ought to root most freely. The Noisettes and true Bourbons being the easiest of all Roses to come from cuttings. Begin afresh. Make a light sandy compost, and put it three inches thick on some shaded border, but not too much shaded; take common handglasses, instead of frames; and, for bottom heat, trust entirely to the heat of the earth. Make short cuttings of half-ripened side-shoots, plant them very firmly, water them, and shade the glasses *from the sun*, but not from the light, for the first three weeks; and, after rooting, they will have taught you more about Rose cuttings than all your reading up to that day. Then it will be time enough for you to think of hotbeds for Rose cuttings.]

NEW AND RARE PLANTS.

DENDROBIUM FALCONERI; var. SEPALIS PETALISQUE OBTUSIORIBUS (*Dr. Falconer's Dendrobium; with blunter sepals and petals*).

Sent from Assam by Mr. Simons, and bloomed in March, 1858, at the nursery of Messrs. Jackson, Kingston. Flowers white, tipped with purple, and centre deep yellow.—(*Botanical Magazine*, t. 5058.)

ILEX CORNUTA (*Horned-leaved Holly*).

Found by Mr. Fortune near Shanghai. Introduced by Messrs. Standish and Co., Bagshot Nursery. Very handsome leaved.—(*Ibid.* t. 5059.)

RHODODENDRON VIRGATUM (*Twiggy Rhododendron*).

Found by Dr. Hooker, at elevations of from 8000 to 9000 feet, in the Sikkim Himalaya. Flowers pink, produced in April, in a cool frame, by Mr. Lowe, of the Clapton Nursery.—(*Ibid.* t. 5060.)

POLYGONATUM PUNCTATUM (*Spotted-stalked Solomon's Seal*).

Native of Nepaul and Sikkim Himalaya, at elevations of from 7000 to 11,000 feet. Bloomed in the open ground, during April, 1858, by Mr. Nuttall, in his garden at Nutgrove, Rainhill, Lancashire.—(*Ibid.* t. 5061.)

THYRSACANTHUS INDICUS (*Indian Thyrsacanthus*).

Native of Assam. Flowers creamy white; first bloomed by Mr. Nuttall, during April, 1858, in a warm stove.—(*Ibid.* t. 5062.)

INDIGOFERA DECORA (*Comely Indigo plant*).

"A most lovely and ornamental greenhouse plant." Flowers in long, upright, pink racemes, and leaves like those of the Laburnum, but more freshly green. Introduced from Shanghai, by Mr. Fortune.—(*Ibid.* t. 5063.)

INTERESTING DISCOVERY.—At the last meeting of the Linnæan Society, Dr. Joseph Hooker read an extract from a letter, mentioning the discovery, near the banks of the river Amazon, of large Equisetums, the plant which abounds fossilised in coal formations. These plants were twenty feet high, and the stem was the thickness of a man's wrist. The writer of the letter stated that his surprise on the discovery of these plants, which were believed to have been extinct, could scarcely have been exceeded had he seen the saurians of former worlds revived, and rushing through the swamp.

NOTES FROM THE CONTINENT.—No. 26.

GHENT.

AFTER a hasty run round the ramparts of Brussels, now laid out as promenades, which must be very pleasant in summer, I took a glimpse at the so-called "Park," which is nothing more than a large tree-planted square, facing the Palace, and having the Chamber of Representatives, and other fine buildings, around it. Fountains and statues, of course, form part of its attractions, and the green turf, with the seats below the avenues of trees, render it by no means a despicable place, though to call it a park seems somewhat anomalous. It is remarkable for having been the scene of a terrible conflict during the revolution of 1830. In one corner is a well, above which is a Latin inscription, saying that in April, 1717, Peter the Great fell into it, from having drunk too much wine. Having but little chivalric feeling, I left Brussels, without visiting the plains of Waterloo, and took the train to Ghent. In little less than two hours I reached this fine old city—"the Belgic Manchester."

Ghent, though much fallen from its ancient grandeur and importance, is still a considerable place, having more than 100,000 inhabitants; it is situated at the junction of the two rivers, Lys and Schelde, whose numerous branches intersect and traverse the town in all directions. The names of the two principal nurserymen—Van Houtte and Verschaffelt—render Ghent familiar to everyone connected with horticulture.

I visited Verschaffelt's first, and I am bound to confess, that I did not find it kept up in such style as I had expected. It is one of those places where a great deal of business is done without making any remarkable show; there was a want of neatness and order which much surprised me, and some of the plants—as the Orchids, particularly—were not in such good health as I had anticipated. On the other hand, there were some things, to be mentioned hereafter, which could not be improved. I told my opinion to a friend who accompanied me, and he said the reason was evident,—the proprietor objected to employ foreigners, and the natives were by no means first-rate cultivators; but it must be remembered, that my informant was a German, and between the Germans and the Belgians there is often a dash of professional jealousy. At Van Houtte's, on the contrary, men of all nations are employed; and his place is undoubtedly superior.

The principal structure in Verschaffelt's nursery is a curvilinear-roofed Palm-house; it contains many fine plants of this princely family, as well as some remarkable specimens of Aroidaceous and Bromeliaceous plants, and Screw Pines. The stock of young Pines, now much in demand on the continent, was most extensive, and I saw hundreds of small seedlings of *Pandanus odoratissimus*. M. Verschaffelt imports a great number of plants from abroad, and, among these, I noted some fine stems of Tree Ferns, including the rare *Balanium Karstianum*.

With some newly-introduced South American Orchids, was a magnificent cluster of the interesting *Lycopodium tetragonum*, some of the shoots of which were two feet in length; and it was looking as fresh and green as when it hung from the branch of a tree in its native Brazilian forest. These Lycopods are somewhat difficult to manage until they once become established—no amount of attention will keep them from dying most vexatiously; but after they have been induced to take a firm hold of some good rough peat (which seems to be the best substance to pot them in, with a little chopped moss, and a few pieces of porous brick), they are much more easy to manage, and, with an occasional shift, may be cultivated for years. Some gardeners cover them with a bellglass, but established plants do much better without any coddling of this sort. They may be increased from cuttings, struck with a little bottom heat, but seldom live long. They differ entirely from the *Selaginellas*, to which they are so nearly related botanically, and which are amongst the easiest plants to cultivate.

Plunged in the tan-bed of one of the stoves were two dozen fine stems of the Elephant's-foot plant (*Testudinaria elephantipes*), recently received from the Cape of Good Hope. With them were some old plants, Cycas and Zamia, which, if they shoot out well, as is more than probable under this treatment, will make noble objects.

The stage of one house was filled with nice bushy plants,

of that universal favourite, the *Gardenia*. *G. florida* and *G. Fortunei* were the sorts principally grown; but the smaller leaved *G. radicans* makes a beautiful, close, round head, if grafted upon a stem of *florida*, like miniature standards. This treatment causes it to grow and flower more freely than it does on its own roots.

Another house was full of the *Myrtle-leaved* and *Otaheite* Oranges, these two being decidedly the best for pot culture. Words would fail to give an idea of the vast number of Azaleas, Rhododendrons, and Camellias, which are to be seen, of every age, and of all sizes, in this garden. The Belgians can, at any rate, propagate and grow these three genera in such perfection as they are not to be found elsewhere.

There were not many plants which could be said to be quite new here; but I must not omit to mention two with which I was much struck—*Mandirola lanata*, a Gesneraceous plant, in habit not much unlike a Gloxinea, with ovate woolly leaves, freely producing its delicately Lavender-tinted flowers; and *Salvia tricolor*, a small-blossomed sort, but very pretty; the flowers being bright rose and white, but varying much in different individuals. It will make a useful addition to our border plants, if it should not be found suitable for the flower garden.—KARL.

NEW BOOKS.

THE PINETUM.*—The author of this work has had, perhaps, better opportunities than most men of studying the family of Coniferous plants. Engaged, for a great number of years, in the gardens of the Horticultural Society, at Chiswick, and a great part of the time superintendent of the Arboretum department in those gardens, he had the advantage of becoming thoroughly conversant with the subject; and the best evidence we have that he made the most of his opportunities, is the result of his observations as they are now embodied in the work before us. Hitherto we have had no really good book of reference on Coniferous plants. Lambert's work, apart from its enormous price, is now antiquated and incomplete; and, had it not been for the monographs of Endlicher and of Carrière, we should have no guide to the study of this interesting family. It is, therefore, with pleasure that we receive this book of Mr. Gordon's, which, up to the present time, leaves nothing to be desired on the subject, for, we believe, he has included every known species. The work is arranged alphabetically; but, to suit the convenience of those who wish to study the subject scientifically, and to facilitate the discovery of a species the name of which may be unknown, a synoptical arrangement of the genera is provided. This arrangement, based on that of Endlicher, is clear, distinct, and intelligible, quite free from all scientific technicalities, and cannot fail to prove of great service to all those engaged in the cultivation of Conifers. Mr. Gordon has done his work well, and we cannot but regard it as a valuable addition to our botanico-garden literature. We observe some errors interspersed throughout the work; as, for instance, at page 112, where, among the synonymes of *Juniperus thurifera*, we find "*J. koophora unze*," which should be *J. oophora kunze*, and at page 292 Mr. Fortune is styled Dr. Fortune; but these, and some others, are mere surface blemishes, and have been corrected at the end of the work, which should be in the hands of every cultivator of Coniferæ. It is furnished with a copious index of the genera, species, and synonymes, with the authorities for the nomenclature; the whole forming a valuable hand-book of the subject.

OMAR JACKSON.

By the Authoress of "*My Flowers*."

So many months have passed since I last addressed my readers, that I fear they have blotted me out of their remembrance. Nevertheless, I have not ceased to remember them, and I desire to renew our ever-agreeable intercourse, by bringing

* *The Pinetum*, being a Synopsis of all the Coniferous Plants at present known, with Descriptions, History, and Synonymes, and comprising nearly One Hundred New Kinds. By George Gordon, A.L.S., formerly Superintendent of the Horticultural Gardens, Chiswick; assisted by Robert Glendinning, F.H.S., of the Chiswick Nursery, near London. London: H. G. Bohn, 1858.

before their notice a solemn scene which has passed before my eyes during my "recess." But, first, I would ask the blessing of the Lord upon my readers, myself, and my endeavours to do them good, after so long a silence; for, without His grace and favour, neither the acts of mighty men, nor the ways of obscure folks, can stand or prosper.

The subject of my present sketch was a man in humble life, but of such quickness and natural ability, that whatever he did was well and cleverly done, and he might have been an useful and superior character. His father was a stud groom in the large establishment of a sporting nobleman; and I believe that no place or calling can be so dear and delightful to Satan's heart as a "sporting" stable. Words and deeds of darkness abound in such haunts; vice, misery, and ruin stalk abroad; and deep, deep is the guilt and responsibility of those who support and encourage such dens of depravity. I have never forgotten the dreadful death of a poor whipper-in, from *delirium tremens*. It took place in our neighbourhood, and people, for a minute or two, shuddered, and shook their heads. It was but a minute or two to *them*. But, oh! my readers, think of the *eternity* to *him*!

Jackson, the elder, degenerated from a nobleman's service to that of a private gentleman, in course of years, and, as he grew old and inactive, he settled among "our villagers," and was established as postman and carrier. He had a wife and son and daughter. The daughter married, but the son remained at home with his parents, and grew up, as might be expected. He was born, most probably, within sight and sound of the horn; named, evidently, after some favourite horse, and his tastes and talents all leaned stableward as he grew up. Violent in temper, uncontrolled, and untaught in every good thing, Omar became a bye-word in the parish, and sat among those whom every one avoided. He was sometimes in service, and oftentimes out; sometimes riding about upon long-tailed colts, with alarming bridles, and a long whip; sometimes leaning over the wall doing nothing, as it *seemed*, but ruling with a rod of iron his now widowed mother, and breaking her spirit and heart. The scenes that took place under that roof were fearful. The neighbours knew that he threatened his mother's life continually. Often he retired to bed with a huge knife under his pillow, and every day they expected to find her weltering in blood, or smothered in the well. It was a terrible home for a British mother, poor though her lot in life. She *might* have sat calmly, and in safety, within her cottage "eastle," where every British heart beats *free*; but, alas! she was a poor, distracted, terrified slave to a savage, spoiled son, and a living monument of parental weakness and crime. It is a crime, when children "make themselves vile," and parents "restrain them not."

At length poor dame Jackson died. It was, in the opinion of some, "a happy release." Ah! what a darkness rests upon those who say, and those who suffer such things! There is, dear readers, no "happy release" to any one, *except* we have accounted all things but dung, that we may win Christ, and be found in Him; "not having our own righteousness, which is of the law, but that which is through the faith of Christ."

After his poor mother's death, Omar lived on in the same little cottage, which was a lifehold. He spent most of his spare time in the cottage of a widow, whose acquaintance with him did not add fragrance to her name; and he worked on a neighbouring estate where his father had been known of old. He parted off two small rooms for himself, and let the rest of the cottage; at one time displaying two or three herrings, and a few apples, &c., in the very small window. But no one was tempted to buy, and the flies seemed to possess the land. This state of singlehood lasted for several years, until he advanced beyond middle life, without one friend to solace or respect him.

At length he began to decline in health, became less and less able to work, and more and more broken in appearance. He had always been a dirty, wild-looking object, but he now grew sickly and feeble, and kept very much to himself. No one could tell how he lived, or dared to have much curiosity on the subject; none were invited to enter his den, and the door was always locked. Under the most favourable circumstances, the sickness of an unmarried man is sad and melancholy; the wife or daughter's hand is such a blessed smother of pillows, and such a sweetener of tea and gruel. But,

where all things are *unfavourable*,—where there are no comforts of any kind, inside or out,—how thrice distressing is it to witness the trials of a lone man. An old maid, God bless her, amid all the negatives of spinsterhood, can make herself comfortable in a thousand ways, and looks business-like, and somewhat in her right place; but a single man looks grim and awkward in his best estate, and miserably deficient in time of sickness.

In the course of time Omar Jackson grew sensibly worse, and at last never came forth at all. His last effort had been to be put into a donkey cart, and driven round the grounds and farm, where he had worked so long. We were told that long and lingering was his last look as they brought him home.

The next change that took place in the lonely dwelling of him who menaced his mother's life, was groans that reached the ears of his tenants in the stillness of night. They called, but he refused to let them in. At last they forced their way in, and found nothing whatever in the two miserable rooms, but the occupant lying on a bare bedstead, covered with an old sack. No bed clothes, no furniture, no food—not even "a sherd to take fire withal from the hearth." With kind compulsion his tenants took him into their own room, placed him in bed, and ministered to him of their little substance. Dark, ignorant, and laden with unrepented sin, this poor, unhappy mother-slayer had no comfort, and no hope. He lay and groaned. Did the form of that poor trembling mother stand in that very room before his darkening sight? Did the sound of her cries, and the touch of her tears, break up the clods of that hard heart, as he lay dying? Did they rise up already in judgment, and condemn? He once or twice was heard to say, "Lord have mercy upon me," but that was all. He said he knew not how to pray, and wished for no spiritual aid. In this awful and distressing state he sank into eternity.

Children, behold the end of him who *ill-used his mother*! Take warning, lest ye also come into the same condemnation. Parents, lay not up for your children death-beds like this. When they make themselves vile, when their childish feet haste to do evil, *restrain them*. Remember Eli and his sons. Let us *all* remember, that sin, and worldliness, and forgetfulness of God, brings us to judgment, and, if even in this world bitter are the fruits of unrepented sin, what will it be when "the worm dieth not, and the fire is not quenched?"

IMPLEMENTS AND APPLIANCES EXHIBITED AT CHISWICK.—JUNE 9th and 10th.

(Continued from page 159.)

AMONG the philosophical instruments exhibited by Messrs. Negretti and Zambra, we omitted to notice, in our former report, a *Garden Thermometer*, mounted on a porcelain scale, which is unaffected by the weather, and which may be said to be everlasting. The figures and divisions are not painted on the surface, but eaten into the substance of the scale by the action of fluoric acid, rendering them perfectly indelible—an object much to be desired by gardeners, who have to use these instruments in stoves and forcing-houses, where the humidity acts on them with injurious effects. The scale being of pure white porcelain, and the figures and divisions black, the reading is at all times clear and distinct.

Against one of the walls, in the implement department, a very good method of protecting fruit trees was erected. It is called *Meeston's Fruit and Blossom Protector*, and is constructed both of glass and of canvass; the former for protecting the blossom from frosts in spring, and the latter from the insects and birds in autumn. It is intended to be a moveable covering, and is made in panels, forming a sort of framework, and standing at distances of one foot and two feet and a half from the wall. The idea is good, but the expense is too great to induce a large application of the principle.

Among the implements, we observed and tried a new hoe, called *Sigma's Draw Shave Hoe*—a very useful and effective instrument. It is a thin plate of steel, like that used in the Dutch hoe, but so placed as to work as a draw hoe, and it certainly does its work admirably, keeping itself clean during the operation. *Sigma's Dibber* is an ingenious and useful im-

plement. It deposits grain or seeds of any kind in straight rows, at various distances, and at a uniform depth in the row. We have had no experience of this instrument, but it appears to act easily and effectively.

In statuary, vases, and flower-bordering, there was great variety, some of which was highly ornamental. These were exhibited by Messrs. Ransome, Austin and Seeley, Teagle and Selden. The subjects consisted of statues, vases, flower-baskets, tazzas, and pilasters. The *Patent Siliceous Stone*, of Messrs. Ransome, seems peculiarly adapted for this description of manufacture, from its great durability and stone-like appearance, by which painting is rendered unnecessary. The material consists of flint or fine siliceous sand, combined into a solid mass with silicate of soda (dissolved flints), by exposure to intense heat in kilns, which renders the whole perfectly vitreous, and so durable that specimens exposed for twelve years to the weather are now quite uninjured.

There was an abundance of *Garden Seats, Chairs, and Tables*, in ornamental iron, of which the public took free use. These were supplied by Messrs. Barnard and Bishop, Messrs. Deane, and the Panklibanon Company. We observed, also, seats made of earthenware, to resemble stumps of trees, and adapted for lawns and pleasure grounds. Some of these were admirably executed, and required a close inspection to be able to distinguish them from natural productions.

We were pleased with a very nice garden ornament, exhibited by the Cosmopolitan Glass Company, which is a large black glass globe, surmounted on a pillar, and serving as a convex mirror to reflect the scenery all round it. For a lawn, or the centre of a large flower-garden, it is particularly adapted, and in itself is a very nice ornament.

Among the sundries were *Henderson's Patent Brooms*, which we are glad to hear are becoming popular, and deservedly so. *Ornamental Pots and Vases*, in porcelain, were exhibited by Messrs. Apsley Pellatt and Co. Cullingford, of Islington, was there, with a variety of netting, as well, also, as Haythorn, of Nottingham, with his hexagonal netting; and in the conservatory were exhibited several ornamental *Marine Aquaria* and *Fern Cases*.

THE HOUSEHOLD.

DRYING RASPBERRIES.—Spread the berries on earthen plates, place them on a hot oven until they are scalded; then turn them on drying boards, or hurdles, and dry in the sun.

DRYING BLACKBERRIES.—Place them in a hot oven, until they are thoroughly heated. Lay newspapers on your drying scaffold, spread the berries thinly on it, and dry thoroughly.

CURRENT APPLE SAUCE.—Take the strained juice of ripe currants, and boil it till it has evaporated one-third; skim from it all sediment that may rise to the top while heating; when reduced to the proper quantity, cool, and set it away in proper vessels, in a cool place. It is then ready for use, and will keep any length of time without fermenting. To three quarts of juice add one quart of water; take sweet apples, either dried or green, and cook the same as with boiled cider; sweeten to taste.

RAISED BISCUIT.—Heat three cups of sweet milk with one of butter; work it warm into the flour, with a tea-spoon of saleratus. Have ready some yeast or light sponge, the same as for bread; work this in when the mixture is milk-warm; mix it well, but not stiff, and set in a warm place to rise. When light, mould into cakes, let them set awhile, (five minutes or so), prick the tops of each; bake in a quick oven. These are similar to those made from bread dough. Cold biscuit can be warmed to taste like new, by turning cold water upon them to wet the crusts, then warm through, in a moderate oven.

SODA BISCUIT.—One quart-bowl of flour, one tea-spoon of soda, two of cream of tartar, salt, sour milk, and sour cream, to mix; bake quick.

LEMON PIE.—One grated lemon, one beaten egg, one tea-cup of sugar, one and a half tea-cups of sweet milk, three tea-spoons of flour. Must not add the lemon till just as you set it in the oven. Bake with two crusts. Mix and bake as common custard pie.

ANOTHER.—Beat the yolks of four eggs, add the grated

rind and juice of one lemon, and five tables-poons of sugar; bake with an under crust. When done, add the whites of the eggs, beaten to a froth, with five table-spoons of white sugar; bake again a few minutes. *Try it.*

EXTRA CUP CAKE.—Mix as written. One cup of butter stirred to a cream, two cups of sugar, the yolks of four eggs, teaspoon of essence of lemon or sweet almond; one teaspoon of soda dissolved in a little hot water put to one cup of sweet milk; then three cups of flour, the whites of four eggs beaten to a froth; lastly, two cups of flour with two tea-spoons of cream of tartar, well infused; one cup of wine, *if you like.*

TO CORRESPONDENTS.

LARGE TRUSS OF UNIQUE GERANIUM (W. D.).—Your seedling from *Unique* contained sixteen flowers in one of the trusses,—a fine thing; but we mentioned the same occurrence three or four years back, from Mr. Salter's collection. The latter has the largest flower of the two. We may state, generally, that *Unique* is already prepossessed by the first cross breeder in Europe, that we receive a sample of his work yearly, and that this season he shows symptoms of a possibility of converting a large number of *Pelargoniums* into *Uniques*. One of his seedlings is an improved *Priory Queen Uniqueified*.

MILDEW ON GRAPES (One in Trouble).—Dust your Grapes with flowers of sulphur, whenever, and wherever, the mildew appears. Do not syringe, but keep the air of the vinery very moist, by watering the paths two or three times daily. Take out all the pot plants that will not bear so moist an atmosphere. Your Grapes shrivelling indicate that the roots do not supply the sap fast enough. Water and mulch them.

FRUIT TREES IN ORCHARD HOUSE (A Constant Reader).—These having the red spider and aphis, show that you have not kept them well syringed, and the air of the house moist by watering the path. The trees must have the dead branches cut out at once, the stems and branches be dressed over with sulphur paint, and flowers of sulphur dusted over the leaves. Keep the air very moist; fumigate with tobacco smoke, to kill the aphis. Give liquid manure.

DISEASED GRAPES (A Constant Subscriber).—They have the *spot*, a kind of gangrene, occasioned, we believe, by sudden changes of temperature. The side next the light is usually affected. We do not remember to have seen the spot in any vinery with a westerly aspect.

ROSE LEAVES GRUB-EATEN (Idem).—The upper surface has been eaten by the grub of the fly *Salandria aethiops*. Dusting the grubs with quicklime destroys them.

VARIOUS (A New Subscriber).—You must be more particular. What are the grubs, and which fruit trees, you mean? Send us specimens of the grubs, and tell us the kinds of trees. If by "grubs" you mean caterpillars, dusting with white hellebore powder kills them. A mixture of half water and half sand will best serve to raise *Verbena* cuttings in. Buy our No. 494, for full directions. The paper you refer to is no authority on gardening. What do you mean by "white" on your Apple trees? Let us see it.

HOOPER'S SEEDLING STRAWBERRY (Sells).—Any nurseryman can get it for you.

KEEPING A COW (Alpha).—Your space could keep a cow, but *one* would not answer your purpose. A cow is occasionally dry, and then you would have to buy milk. In an economical point of view, keeping a cow for one family is a loss.

MATTING LOOPS (Evadne).—The ends of these thrust into the ground three inches deep. By means of the finger and thumb take hold of the soil sufficiently to keep the spray of *Verbenas*, *Petunias*, &c., in the desired position.

NAMES OF PLANTS (Aethea).—Yours is a rare native plant, *Oxalis corniculata*. (*Varro*).—Yours is a beautiful shrubby plant, *Spiraea aruncus*, or Goat's-beard *Spiraea*. (*Clericus*).—Your specimens were so carelessly sent, small, and altogether in a bit of whity-brown paper, as to render certainty as to their names needlessly difficult. We believe the following are correct:—1. *Clitoria ternatea*; 2. *Borago laxiflora*; 3. *Adiantum cuneatum*; 4. *Cyanotis vittatus*, otherwise called *Tradescantia zebrina*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JULY 16th. YORK. *Sec.*, Mr. R. Smith, cutler, 10, High Ousegate, York. Entries close July 8th.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. *Sec.*, W. Houghton.

AUGUST 18th. AIREDALE. *Hon. Sees.*, J. Wilkinson and T. Booth, Shipley.

AUGUST 28th. HALIFAX AND CALDER VALE. *Sec.*, Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.

OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

TABLE TALK.

"How is it that *ortolans*, which, a few years since, were sold as rare birds for aviaries, have now become a common dish at the tables of our nobility and gentry?"

"Because of the French revolution of 1830."

"How so?"

"Because, till then, they were monopolised in France; but when society was, for a time, broken up, just in the ortolan season, and when a man became suspected if he only ventured out wearing a clean shirt and gloves; when the unwashed passed the washed with scowls on their faces, and, clenching their fists, muttered, '*Aristo*,' as they passed; to eat ortolans would have been to indulge in a luxury no good citizen could forgive. The dealers in them, therefore, brought them to England. When more peaceful times came, those who could afford them in this country were not disposed to give them up; and now, therefore, the supply is divided."

The old gentleman who asked these questions shook his head, and said, he thought politicians might often take a lesson from the gastronomers, and divide a thing in a friendly way, rather than quarrel for possession of the whole.

Among *birds of prey*, the male provides the food for the young, but the female feeds them. A friend of ours, in Scotland, shot the female of a pair of falcons. For a time he heard continual cries from the young ones, and the male was indefatigable in bringing food. After two days all was quiet. He clambered up the rock, and found the young all dead,—starved to death,—but absolutely walled in with food of every description that the male bird had brought.

CRYSTAL PALACE POULTRY SHOW.

WHATEVER the merits of the overture to be played, or the charm of the concert that is to follow, nothing can exceed the torture to musical ears, that is inflicted by the preparatory tuning. The groanings of the bass instruments, the squeakings of the violins, the swell of the organ, and the mingled tones of the brazen throats, give such an idea of chaos and confusion as could not be attained by any pre-concerted performance. Whatever the delay may be in the appearance of the leader, or however long it may be necessary to wait for distinguished company, this discord will last its full time, nor do we believe it would ever cease, but for the scarcely audible tap of the conductor's baton on his desk. All is immediately still. Every performer has his eye on the leader, and every whisper in the assembly is hushed. Perfect harmony is the result, and the office of the leader is to keep all in time. In spite of all that has been said and written to the contrary, man is a procrastinating animal, especially in those things that are not strictly connected with his business and pursuit. That which will be in time a week hence, is often deferred till it is too late.

Many who keep poultry do so as a pastime and recreation; and although they are anxious to introduce method into their poultry matters, yet the receipt of prize lists and entry papers, from twelve or eighteen Shows, two months before the entries close, leaves them, when the time draws nigh, with a recollection as confused as the tuning we have attempted to describe.

Ladies and gentlemen, intending exhibitors, please to take this as the conductor's tap, and be informed that *the entries for the Crystal Palace Poultry Show close on the 10th of July*. We have purposely delayed our "reminder" till now, because, when this is read, it will be necessary to make them at once, although then there will be ample time to do so comfortably.

We are happy to inform amateurs there is every probability, almost the certainty, that this will be the best Show yet held, at this favourite spot. There is no occasion to wish it success, as that belongs to it, but we may be allowed to hope it will be extended. Added to the prestige of continual success, it

has unusual claims on amateurs. Faith has been kept with exhibitors on every occasion, and in every way. The prizes and the amounts due for pens claimed, are immediately paid. The birds are carefully tended, and punctually returned. The prize list is a liberal one, and there is no extra sixpence for the poultry. The ordinary admission money to the Palace admits to everything. It is thus a boon conferred on all amateurs, and it has a claim on their best support.

We have read of a "Cheap John" at a fair, who offered a double-barrelled gun, a pair of ivory-handled razors, a hammer, and a portrait of Fergus O'Connor, for fourpence. This was cheap, but it was not so cheap as a first-class return ticket, and admission to the Palace, for half-a-crown; other classes at lower rates. Escape London for the day, enjoy the Poultry Show, the beautiful prospect, the music, the gardens, the statues, the Courts, and the hundred and one *féeries* of the Palace. It is a marvellous sight, and is more like the realisation of a gorgeous dream, than anything we have ever seen. It is a place where all can be amused in their own different ways. We often wonder at the fact, but it is true, that all are not poultry fanciers. Even in the same family, one will take to poultry, another to pigeons, a third to China, a fourth to archæology, the next to paintings, the sixth to music, and the last to flowers. Each one votes the other's hobby a bore, and if a day's pleasure in sight seeing is to be had in company, it is only accomplished by mutual sacrifices. We invite such to the Poultry Show at the Crystal Palace, and we promise them all enjoyment in their several *penchants*.

EGGS TRAVELLING BY RAILWAY.

I WAS greatly surprised to see my name mentioned in THE COTTAGE GARDENER, of June 22nd, in connection with the hatching of eggs, after travelling 530 miles by rail.

I am much obliged to Mr. Renny for his good wishes, and very much more so to you, for your kindness in allowing the notice to appear, although I would much rather that it had not appeared; for it is quite as likely that, next week, you may receive from some of my customers something like the following:—

"Sir,—Some time ago, I bought of Mr. Chadwin a sitting of eggs, which *only travelled ten miles by rail*, and *every egg* was addled. *This deserves notice.*"

If this should appear, I shall not have a leg left to stand upon.

I can only say, that every order for eggs received by me has been most faithfully executed; but, for all this, I doubt not that some of my customers have met with disappointment, as is usually the case.

My egg advertisement, which appeared in your paper, procured for me many more customers than I could supply. I therefore feel myself to be greatly indebted to you, and beg to tender you my warmest thanks.—GEORGE CHADWIN.

SHEFFIELD POULTRY EXHIBITION.

THIS Exhibition, extending from June 28th to July 1st, is the second meeting of this Society; and we feel great pleasure in recording the fact, that the success attending it quite equalled the most sanguine hopes of the managing Committee. The number of visitors (many having journeyed long distances) was extraordinary, caused by the conviction, that so liberal a prize-list as the one offered by the Sheffield Committee would certainly bring into competition the poultry of all our principal exhibitors. The result has proved the truth of these opinions, for a better collection could not be presented to the public; although, from the season of the year, some few of the birds were scarcely in the high condition usual at a later period, when their annual moult is completed. The arrangements left nothing for even the most capricious amateur to desire: all that money or time could do was done to ensure success. Indeed, an outlay of fully £800 was willingly incurred by the projectors, to leave no ground of complaint from any quarter. The result was, as before stated, that all went off as pleasantly as possible.

The number of entries was between 800 and 900; and, to

accommodate so goodly a collection, a substantial building of woodwork was erected, some sixty yards long by thirty wide. The roof being canvass only, gave an excellent opportunity of easy ventilation.

The pens used were those of Mr. Turner, wireworks, Sheffield; they are excellently adapted for the purposes intended, fighting being altogether impossible. We were much pleased to find that all the larger varieties of fowls had pens allotted to them two feet six inches high; so that even Malays, Coehins, and Dorkings, were both comfortable to themselves, and easily inspected by the large influx of visitors, without any trouble whatever.

All the specimens were shown in single tier, save the Pigeons and Rabbits; and the avenues were left so comfortably wide, that the company, though great, experienced no inconvenience from pressure.

The whole time the Show remained open, Sheffield presented the appearance of a general holiday, all parties seeming personally interested in this annual festivity.

A collation, at which some 300 individuals, of all classes, were seated, under the auspices of the Mayor, was provided on the day of opening, and at least 100 ladies were among those partaking of this refreshment. The scene was, therefore, a gay one, the weather fine as possible, whilst bands of music added an additional charm to the entertainment.

Where all the poultry exhibited was so good, it would be invidious to particularise; indeed, a stronger proof of excellence could not possibly be adduced than that all the prizes were awarded. We will, therefore, confine our observations to the fact, that the classes for *Spanish*, *Dorkings*, *Game* of all varieties, *Cochins*, and *Hamburgs*, have very rarely been equalled; whilst a reference to the prize-list will convince our readers how hardly won were most of the laurels of the successful ones at Sheffield.

The Judges who officiated were, for Game, Mr. Challoner, of Worksop; for Pigeons and Rabbits, the Committee retained the services of a local amateur; whilst for the whole of the remaining classes of poultry, the awards were rendered by Mr. Edward Hewitt, of Spark Brook, Birmingham, and Mr. W. Tegetmeier, of London.

We feel great pleasure in stating, in conclusion, that the Show just held far exceeded the one of last year, and, undoubtedly, promises well to become one of the very first in the kingdom. Such success is entirely owing to the earnest efforts of the Committee, who evidently seemed determined to waive every other consideration to promote the well-doing of their Society, and we cordially hope future meetings of this important Association may prove equally successful.

SPANISH.—First, W. W. Brundrit, Runcorn, Cheshire. Second, J. Dixon, North Park, near Bradford. Third, Mrs. J. C. Hall, Surrey House, Sheffield. Fourth, W. Brundrit, Runcorn, Cheshire. Highly Commended, W. Bailey, Pleasant Cottage, Lower Kennington Lane, London; S. H. Hyde, Moss Cottage, Ashton-under-Lyne; J. Busst, jun., Walsall. Commended, G. Botham, Wexham Court, Slough; W. J. Woodhouse, Old Street Road, London; R. Teebay, Fulwood, near Preston. (A good class.)

SPANISH CHICKENS.—First, J. K. Fowler, Aylesbury. Second, Mrs. A. Watkin, Freedom Cottage, Walkley. Third, Mrs. J. C. Hall, Surrey House, Sheffield.

SPANISH (Single Cock).—First, Mrs. J. C. Hall, Surrey House, Sheffield. Second, S. H. Hyde, Moss Cottage, Ashton-under-Lyne. Highly Commended, T. W. George, Beeston Padge, Notts; Miss S. A. Harvey, Upperthorpe. Commended, J. R. Rodbard, Langford, near Bristol.

DORKINGS (Coloured).—First, W. Bromley, Smithfield, Birmingham. Second, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Third, Capt. Hornby, Knowsley Cottage, Prescott. Fourth, W. Evans, Hurst House, near Prescott. Highly Commended, P. Barnard, Eiby, Brigg; C. Smith, Durnford, near Salisbury; Rev. J. Hill, The Citadel, Hawkestone. Commended, J. Bedford, Wadsley Park, near Sheffield; H. W. B. Berwick, Helmsley; Rev. G. Hustler, Appleton, Tadcaster; S. Burn, 1, East Terrace, Whitby. (An excellent class.)

DORKING CHICKENS (Coloured).—First, C. H. Wakefield, Malvern Wells. Second, Capt. Hornby, Knowsley Cottage, Prescott. Highly Commended, Mrs. Parkinson, Roxholm Hall, near Sleaford. Commended, H. W. B. Berwick, Helmsley; J. Whittington, Wootton Waven, Warwickshire; Rev. G. Hustler, Appleton, Tadcaster.

DORKINGS (White).—First, J. Robinson, Vale House, near Garstang. Second, S. Burn, 1, East Terrace, Whitby. Commended, J. Bedford, Wadsley Park, near Sheffield.

DORKING CHICKENS (White).—First, J. Robinson, Vale House, near Garstang. Second, H. Lingwood, Needham Market, Suffolk. Highly Commended, J. Camm, Farnsfield, Southwell. (A superior class.)

DORKINGS (Single Cock of any Colour).—First, Capt. Hornby, Knowsley Cottage, Prescott. Second, G. Botham, Wexham Court Slough. Highly Commended, H. W. B. Berwick, Helmsley; H. Ling-

wood, Needham Market, Suffolk; Hon. W. W. Vernon, Wolseley Hall, Rugeley.

GAME (White and Piles).—First, S. Matthews, Chilton Hall, Stourmarket. Second, T. H. D. Bayley, Esq., Ickwell House, Biggleswade. Third, G. Robinson, Thorpe Salvin, near Worksop. Highly Commended, Messrs. Haigh and Hartley, Lip Hill Bank, Holmfirth; J. Camm, Farnsfield, Southwell; W. Dawson, Selly Oak, near Birmingham; Hon. W. W. Vernon, Wolseley Hall, Rugeley; G. Hellewell, Walkley; F. Sabin, Bull Street, Birmingham; Messrs. Bird and Beldon, West Parade, Bradford. Commended, F. Sabin, Bull Street, Birmingham.

CHICKENS (White and Piles).—First, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, S. Matthews, Chilton Hall, Stourmarket. Commended, Mrs. H. Sharp, Mill Lane, Bradford.

GAME (Black-breasted and other Reds).—First, R. Woods, Osberton, Worksop. Second, W. Mellows, Carburton, near Ollerton. Third, A. Sutherland, Burnley, Lancashire. Highly Commended, R. Woods, Osberton, Worksop; G. Moss, The Beach, Aigburth, near Liverpool; T. Dunk, Bridge-street, Crookes, Sheffield; Hon. W. W. Vernon, Wolseley Hall, Rugeley. Commended, E. Glover, Olton Green, Solihull.

CHICKENS (Black-breasted and other Reds).—First, W. Coupe, Langworth, near Mansfield. Second, W. Bentley, Scholes, Cleckheaton, near Leeds. Highly Commended, Messrs. W. Hill and Son, Brigg; W. Bentley, Scholes, Cleckheaton, near Leeds. Commended, G. D. Jarvis, Tickhill; W. Coupe, Langworth, near Mansfield; Mrs. H. Sharp, Mill Lane, Bradford.

GAME (Blacks and Brassy-winged, except Greys).—First, W. Dawson, Selly Oak, near Birmingham. Second, J. R. Rodbard, Langford. Third, G. Hellewell, Walkley. Highly Commended, J. Dixon, North Park, Bradford.

CHICKENS (Blacks and Brassy-winged, except Greys).—First, G. Hellewell, Walkley. Second, Messrs. Noble and Ineson, Heckmond-wike. Highly Commended, G. Hellewell, Walkley. Commended, Messrs. Bird and Beldon, West Parade, Bradford.

GAME (Duckwings and other Greys and Blues).—First, A. Sutherland, Burnley, Lancashire. Second, G. Boot, Chesterfield. Third, J. Brown, Pole Street, Preston. Highly Commended, F. W. Fox, Daisy Hill, Dewsbury; W. Dawson, Selly Oak, near Birmingham. (An excellent class.)

CHICKENS (Duckwings and other Greys and Blues).—First, G. Hellewell, Walkley. Second, J. R. Rodbard, Langford, near Bristol. Highly Commended, W. Bentley, Scholes, Cleckheaton, near Leeds; Mrs. H. Sharp, Mill Lane, Bradford.

GAME (Single Cock of any Colour).—First, Capt. Hornby, Knowsley Cottage, Prescott. Second, W. Mellows, Carburton, near Ollerton. Third, J. Camm, Farnsfield, Southwell. Highly Commended, W. F. Dixon, Birley House, near Sheffield; J. Hartop, Barnbro' Hall, Doncaster; Capt. Hornby, Knowsley Cottage, Prescott; G. Moss, The Beach, Aigburth, near Liverpool; A. Sutherland, Burnley, Lancashire; J. Hirst, Walkley. Commended, G. Wombell, Ecclesfield; W. Bentley, Scholes, Cleckheaton, near Leeds; W. Dawson, Selly Oak, near Birmingham; Mrs. Parkinson, Roxholm, Sleaford.

COCHIN-CHINA (Cinnamon and Buff).—First, J. K. Fowler, Aylesbury. Second, T. Stretch, Marsh Lane, Bootle, Liverpool. Third, H. James, Walsall. Commended, Miss V. W. Musgrove, Aughton, near Ormskirk; Mrs. A. Watkin, Freedom Cottage, Walkley.

CHICKENS (Cinnamon and Buff).—First, J. K. Fowler, Aylesbury. Second, P. H. Jones, High Street, Fulham. Highly Commended, Mrs. A. Watkin, Freedom Cottage, Walkley. Commended, Miss V. W. Musgrove, Aughton, near Ormskirk.

COCHINS (Brown and Partridge Feathered).—First, Miss V. W. Musgrove, Aughton, near Ormskirk. Second, G. C. Adkins, West House, Edgbaston, near Birmingham. Third, H. Tomlinson, Balsall Heath Road, Birmingham. Commended, P. Cartwright, Oswestry.

CHICKENS (Brown and Partridge Feathered).—First, T. Stretch, Marsh Lane, Bootle, Liverpool. Second, P. Cartwright, Oswestry. Commended, J. Bradwell, Southwell, Notts.

COCHINS (White or Black).—First, W. Titterton, Birmingham. Second, R. Teebay, Fulwood, near Preston. Third, J. R. Rodbard, Langford, near Bristol.

CHICKENS (White or Black).—First, Miss S. R. Herbert, Powick, near Worcester. Second, R. Chase, Moseley Road, Birmingham. Highly Commended, V. Wilkinson, Southwell, Notts. Commended, J. K. Fowler, Aylesbury.

COCHIN-CHINA (Single Cock of any Colour).—First, T. Stretch, Marsh Lane, Bootle, Liverpool. Second, H. Tomlinson, Balsall Heath Road, Birmingham. Highly Commended, J. R. Rodbard, Langford, near Bristol. Commended, Mrs. Robinson, The Priory, Mansfield, Woodhouse, Notts; Miss S. R. Herbert, Powick, near Worcester; H. Churchill, Gloucester.

BRAMA POOTRA (Light or Dark).—First, G. Botham, Wexham Court, Slough. Second and Third, R. Teebay, Fulwood, near Preston.

BRAMA POOTRA CHICKENS.—First, R. Teebay, Fulwood, near Preston. Second, J. Nainby, Brigg. Highly Commended, J. K. Fowler, Aylesbury.

BRAMA POOTRA (Single Cock).—First, R. Teebay, Fulwood, near Preston. Second, J. K. Fowler, Aylesbury. Highly Commended, G. Botham, Wexham Court, Slough. Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley.

HAMBURG (Golden-pencilled).—First, J. B. Chune, Green Bank, Coalbrookdale, Shropshire. Second, T. W. Jones, Wellington, Salop. Third, W. Titterton, Birmingham. Highly Commended, G. Botham, Wexham Court, Slough. Commended, Rev. S. R. Hole, Cauntton Manor, Newark.

CHICKENS (Golden-pencilled).—First, Messrs. Carter and Gaultier, Poulton-le-Fylde, Preston. Second, H. Wood, Ledget Green, near Bradford. Commended, J. Martin, Mildenhall Mills, Clains, Worcester; T. Birks, Cornhill, Sheffield.

HAMBURG (Golden-spangled).—First, J. B. Chune, Green Bank, Coalbrookdale, Shropshire. Second, J. Davies, Bull Street, Harborne, near Birmingham. Third, W. R. Lane, Bournbrook Farm, near Birmingham. Highly Commended, H. Carter, Upper Thong; Messrs. Haigh and Hartley, Lip Hill Bank, Holmfirth; S. H. Hyde, Moss

Cottage, Ashton-under-Lyne. Commended, G. Daft, Halloughton, Southwell; Messrs. Haigh and Hartley, Lip Hill Bank, Holmfirth.

CHICKENS (Golden-spangled).—First, G. Brook, East Parade, Huddersfield. Second, Messrs. Haigh and Hartley, Lip Hill Bank, Holmfirth.

SINGLE COCK (Gold or Silver-spangled).—First, E. L. Sykes, Poulton-le-Fylde. Second, J. Dixon, North Park, near Bradford.

HAMBURGH (Silver-pencilled).—First, T. Keable, Rowdefield Farm, Devizes. Second, Rev. F. B. Pryor, Bennington Rectory, Stevenage, Herts. Third, E. Archer, Malvern. Commended, Rev. F. B. Pryor, Bennington Rectory, Stevenage, Herts; Hon. W. W. Vernon, Wolseley Hall, Rugeley; Mrs. H. Sharp, Mill Lane, Bradford.

CHICKENS (Silver-pencilled Hamburg).—First, E. Archer, Malvern. Second, Mrs. H. Sharp, Mill Lane, Bradford. Highly Commended, E. Archer, Malvern; Messrs. Bird and Beldon, West Parade, Bradford.

HAMBURGH (Silver-spangled).—First, W. Titterton, Birmingham. Second, Mrs. H. Sharp, Mill Lane, Bradford. Third, Messrs. Bird and Beldon, West Parade, Bradford. Highly Commended, R. Teebay, Fulwood, near Preston. Commended, A. G. Waithman, Halifax; J. B. Chune, Green Bank, Coalbrookdale, Shropshire.

CHICKENS (Silver Spangled).—First, Messrs. Bird and Beldon, West Parade, Bradford. Second, J. Dixon, North Park, near Bradford. Highly Commended, Messrs. Bird and Beldon, West Parade, Bradford.

SINGLE COCK (Gold or Silver-pencilled).—First, C. Merrey, Station Street, Burton-on-Trent. Second, J. Dixon, North Park, near Bradford.

POLANDS (Black, with White Crests).—First and Third, J. Dixon, North Park, near Bradford. Second, G. C. Adkins, West House, Edgbaston, near Birmingham. Highly Commended, G. Ray, Ivy Cottage, Minestead, Hants.

CHICKENS (Black, with White Crests).—First, T. Battye, Holmbridge, Huddersfield. Second, G. Ray, Ivy Cottage, Minestead, Hants. Commended, J. Dixon, North Park, near Bradford.

POLANDS (Golden).—First, J. Dixon, Esq., North Park, near Bradford. Second, A. G. Waithman, Halifax.

CHICKENS (Golden).—No birds exhibited.

POLANDS (Silver).—First, W. Dawson, Selly Oak, near Birmingham. Second, G. C. Adkins, West House, Edgbaston, near Birmingham. Third, J. Dixon, North Park, near Bradford. Highly Commended, W. Titterton, Birmingham.

CHICKENS (Silver).—First, G. C. Adkins, Esq., West House, Edgbaston, near Birmingham. Second, James Dixon, North Park, near Bradford.

POLANDS (Single Cock of any Colour).—First, G. C. Adkins, West House, Edgbaston, near Birmingham. Second, Miss S. A. Harvey, Uppertorpe.

REDEAPS.—First, J. Battison, Dee Street, Sheffield. Second, J. Hollins, Owlerton. Third, J. Woollen, Heeley. Highly Commended, T. Wilcock, Wadsley Bridge. Commended, W. White, Barnbro', near Doncaster.

REDCAP CHICKENS.—First, J. Harrop, Walkley. Second, J. Woollen, Heeley. Highly Commended, J. Woollen, Heeley.

REDCAP SINGLE COCK.—First, J. Ward, Wadsley Bridge. Second, Mrs. A. Nicholson, Summerville Cottage, Walkley.

FOR ANY OTHER DISTINCT BREED.—First, W. Rogers, Woodbridge (Malay). Second, Mrs. H. Sharp, Mill Lane, Bradford (Black Hamburgs). Third, W. Dawson, Hopton, Mirfield (Sultans). Fourth, J. Newton Chambers, Thornecliffe (Silk). Highly Commended, J. Ashcroft, Waterloo, near Ashton-under-Lyne (Black Hamburgs); T. W. George, Beeston Podge, Nottinghamshire (Malay); M. Ridgway, Dewsbury (Malay); H. Churchill, Gloucester (White Spanish); J. Rumsey, 182, High Street, Shadwell, London (Malay). Commended, C. Coles, Farcham, Hants (Andalusian); W. Harrison, Northfield House, Masburgh (Burmese Dwarfs); T. W. Jones, Wellington, Salop (Rumpless); Messrs. Bird and Beldon, West Parade, Bradford (White Polands).

BANTAMS (Golden-laced).—First, G. C. Adkins, West House, Edgbaston, near Birmingham. Second, W. Titterton, Birmingham. Commended, T. H. D. Bayley, Ickwell House, Biggleswade; T. Evinson, Chesterfield.

BANTAMS (Silver-laced).—First, J. Monsey, Thorne Lane, Norwich. Second, Messrs. J. and R. Blackburn, Preston.

BANTAMS (Black).—First, R. Hawksley, jun., Southwell, Notts. Second, G. Finch, Worcester. Highly Commended, J. Charlesworth, Boythorpe Cottage, Chesterfield. Commended, A. G. Waithman, Halifax; S. H. Greaves, Pigsaw, Sheffield.

BANTAMS (White or any other Colour).—First, W. Titterton, Birmingham. Second, J. K. Bartram, Bath. Highly Commended, F. Hardy, Bowling Old Lane, Bradford; Hon. W. W. Vernon, Wolseley Hall, Rugeley. Commended, J. Crossland, jun., Wakefield; H. P. Watson, Old Cock Yard, Preston.

GAME BANTAMS.—First, T. H. D. Bayley, Ickwell House, Biggleswade. Second, G. Finch, Worcester. Highly Commended, H. Churchill, Gloucester. Commended, Rev. S. R. Hole, Cauntton Manor, Newark; I. Thornton, Heckmondwike, near Leeds; Lord Berwick, Cronkhill, near Shrewsbury; S. H. Greaves, Pigsaw, Sheffield.

GESE.—First, J. K. Fowler, Aylesbury. Second, J. Price, Londonderry, near Bedale, Yorkshire. Highly Commended, J. Dixon, North Park, near Bradford. Commended, Rev. J. Hill, The Citadel, Hawkestone.

Ducks (White Aylesbury).—First and Second, J. K. Fowler, Aylesbury. Highly Commended, J. K. Fowler, Aylesbury.

Ducks (Rouen).—First, T. Keable, Rowdefield Farm, Devizes. Second, J. K. Fowler, Aylesbury.

Ducks (Any other Variety).—First, H. Churchill, Gloucester. Second, J. Dixon, North Park, near Bradford. Highly Commended, J. K. Fowler, Aylesbury. Commended, T. Grantham, Stixwold, near Horncastle.

TURKEYS.—First, Mrs. Parkinson, Roxholm Hall, near Sleaford. Second, J. Price, Londonderry, near Bedale.

PIGEONS.—*Carriers*.—First and Second, G. C. Adkins, West House, Edgbaston, near Birmingham. Highly Commended, J. Frith, Lily Lane Mills, Halifax. *Almond Tumblers*.—First and Second, G. C. Adkins, West House, Edgbaston, near Birmingham. *Balds and Beards*.—First, J. W. Edge, Aston New Town. Second, G. C. Adkins,

West House, Edgbaston, Birmingham. *Tumblers*.—First and Second, J. Percival, Clent Villa, Harborne, Birmingham. Commended, G. C. Adkins, West House, Edgbaston, near Birmingham. *Owls*.—First and Second, G. C. Adkins, West House, Edgbaston, near Birmingham. *Nuns*.—First, G. C. Adkins, West House, Edgbaston, near Birmingham. Second, J. E. Mapplebeck, Moseley Road, Birmingham. *Turbits*.—First, John T. Lawrence, Liverpool. Second, G. C. Adkins, West House, Edgbaston, near Birmingham. *Jacobins*.—First, G. C. Adkins, West House, Edgbaston, near Birmingham. Second, Mrs. Taylor, Hampden View. Commended, G. C. Adkins, West House, Edgbaston, near Birmingham. *Antwerps*.—First, J. Darwin, Walkley. Second, J. Deakin, Green Lane, Sheffield. *Fantails*.—First, W. Titterton, Birmingham. Second, J. T. Lawrence, Liverpool. Commended, G. C. Adkins, West House, Edgbaston, near Birmingham. *Trumpeters*.—First, G. C. Adkins, West House, Edgbaston, near Birmingham. Second, J. E. Mapplebeck, Moseley Road, Birmingham. *Pouters or Croppers*.—First, G. C. Adkins, West House, Edgbaston, near Birmingham. Second, J. Frith, Lily Lane Mills, Halifax. *Barbes*.—First, P. H. Jones, High Street, Fulham. Second, G. C. Adkins, West House, Edgbaston, near Birmingham. Commended, J. Percival, Clent Villa, Harborne, Birmingham. *Any other New and Distinct Variety*.—First, W. Titterton, Birmingham (Magpies). Second, P. H. Jones, High Street, Fulham (Runts). Commended, Miss E. S. Killingley, Hominglow Street, Burton-on-Trent (White Dragons).

RABBITS.—*For Length of Ears*.—First, J. Taylor, Union Street, Hyson Green. Second, W. Titterton, Birmingham. *For Colour*.—First, B. Gaie, Clarence Street, Sheffield. Second, G. D. Owen, Moorgate, Rotherham. *For Weight*.—First, G. D. Owen, Moorgate, Rotherham. Second, R. Jackson, Occupation Road, Sheffield.

SINGLE GAME COCK.—First, Capt. Hornby, Knowsley Cottage, Prescott. Second, W. Coupe, Langworth, near Mansfield. Third, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Highly Commended, J. Hartop, Barmbro' Hall, Doncaster; Capt. Hornby, Knowsley Cottage, Prescott; A. Sutherland, Burnley, Lancashire; J. Hindson, Barton House, Everton, Liverpool; J. R. Rodbard, Langford, near Bristol (the Judge says he is sorry he has not a fourth prize for this bird). Commended, H. Rangeley, Unstone Grange (commended for weight).

SPECIAL PRIZES.

A Gardener's Tool Chest, value six guineas, the gift of Robt. Jackson, Esq., Mayor of Sheffield, for the best Pen of Grey Dorkings—W. Bromley, Smithfield, Birmingham.

A Gentleman's Tool Chest, value twelve guineas, the gift of Messrs. Turton and Sons, for the best Pen of Spanish Fowls—W. Brundrit, Runcorn, Cheshire.

A Case of Table Cutlery, value six guineas, the gift of John Brown, Esq., for the best Pen of White or Pile Game Fowls—S. Matthews, Chilton Hall, Stourmarket.

A Case of Table Cutlery, value six guineas, the gift of John Brown, Esq., for the best Pen of Black-breasted Brown or other Red Game Fowls—R. Woods, Osberton, Worksop.

A Gardener's Tool Chest, value six guineas, the gift of Chas. Cammell, Esq., for the best Pen of Hamburgs of any variety—T. B. Chune, Coalbrookdale.

A Gardener's Tool Chest, value six guineas, the gift of Chas. Cammell, Esq., for the best Pen of Cochins, any colour—W. Titterton, Birmingham (Whites).

INTRODUCTION OF THE TURKEY.—The first Turkey eaten in France, according to Sonini, was at a supper of Charles the Ninth's, in 1570. Forty-six years previously, in the year 1524, it had been introduced into England from Spain, whither it had been imported from Mexico.—(Sonini's *Buffon*, v. 263.)

PIGEONS.

(Continued from page 200.)

FEEDING AND TENDING THE PIGEONS.

THE Pigeons of the dovecot are usually fed daily, in the yard with the other poultry, on some sort of grain; the rest of their food they procure for themselves abroad in the fields. Much has been said by agriculturists, respecting the destruction occasioned by Pigeons to the corn crops. Very curious statements have sometimes appeared in print, trying to prove the immense quantity of wheat and other cereals destroyed by Pigeons; but nothing is ever said of the benefit they do on the land, which, I really believe, far exceeds the injury done. I may be deemed infatuated, but I hope not so much so as not to hear reason, and compare facts; and I trust that my readers will, for awhile, put aside the deep-rooted prejudice that condemns the poor Pigeon, and consider patiently a few facts. I ask, then, has the Pigeon the bill of a rook? that it may dig in the earth; or the foot of a fowl? that it can scratch over the surface! Does it not, then, follow, that the Pigeon, which can neither dig nor scratch, can only lift such grains as are lying on the surface, or imperfectly covered, and would inevitably fall a prey to some other bird. The Pigeon, by the aid of its swift wings, can, at seed time, soon fill its crop.

When a bird thus laden is shot, and the grains counted, it is a very common practice to multiply the number by 365, to find out how much it could eat in a year; then, reckoning the supposed number of Pigeons in the United Kingdom, an awful amount of depredation is placed to the account of the despised birds. But let us inquire if this formidable theory is consistent with practice. Let us suppose that, during the sowing time of corn, Pigeons feed entirely on grain, it will at once appear that, as they are not armed with hoe or rake, they can only take the waste, and, consequently, do no harm. Again, the enormous cropful that this or that bird was killed with, does not prove that such is its daily ration. On the contrary, a Pigeon could not eat that quantity daily for any length of time, and retain its health and activity. Where, too, could they procure corn in summer and winter? while all the crops are either growing or housed. What is it, then, that they feed on? Open their crops and see. I think I shall not be far wrong when I say, that for at least three-fourths of the year they can procure no corn from the fields: their food then consists of seeds,—the seeds of various weeds,—in devouring which, they render great service to the farmer, by helping him to keep his ground clean, in destroying innumerable seeds of weeds, that are scattered on the surface of stubbles or other lands during winter and summer. At harvest time, they are also accused of devouring the corn, but I never heard of their attacking the standing crops, except in the case of peas, and here, if we consider for awhile, we shall find that the injury done to the crop, is, in reality, nothing. A Pigeon cannot split open the pods, but only pick up the fallen peas: and where is there a pea-field, that the ground is not, more or less, strewn with those that have ripened and fallen from the pods, before the main crop was ready to carry? and what becomes of them? Hogs are sometimes turned into the pea grathen; but are not bushels and bushels ploughed in every year, to feed the mice and rats, and serve them for a winter store. Why then, I ask, refuse the poor Pigeon a small picking? I verily believe, that much of this bigotry respecting Pigeons arises from ignorance, or is made the plea for having a pie at one's neighbour's expense.

There are two periods of the year when the dovecot Pigeons require more liberal feeding. These happen in winter, when the ground is bound hard with frost and snow; and in summer, when all the land is so covered with growing crops that Pigeons cannot get at the earth to pick up the seeds.

An anecdote is related, on good authority, of the peasants, in one of the departments of France, having complained of the great loss they fancied they sustained owing to the number of dovecots in their vicinity. The consequence was, the suppression of the obnoxious birds. The result did not, however, meet their expectations; they found their crops no better; but the weeds increased so fast, that they were glad, after the trial of a season or two, to have the dovecots re-peopled.

Nor must their manure be forgotten, which is of considerable value as a fertilizer. In Persia, and many parts of the East, they build large towers, or houses, for the Pigeons, on purpose to obtain the manure only; as the Mahomedans do not eat Pigeons, but regard them as sacred, and object to Christians keeping them. The kind of food with which Pigeons are supplied seems of but little importance while the bird has its liberty, and can procure such condiments as nature directs; but, in confinement, good old tares, and small horsebeans, are considered the best food; a little wheat occasionally is a good change; fresh and clean water is also another requisite; and, where Pigeons are kept up, or confined, as some fancy breeds are, they ought to have certain helps or condiments, such as grit, lime, salt, and salad. These four I consider necessary to keep the birds in health: the first three are most usually given in the form of what is technically called a salt-cat.

The salt-cat is composed of about equal quantities of a clean, unctuous loam, such as brickmakers use; a coarse, gritty sand, or fine gravel, in which the grains are about the size of pins heads; and old mortar: to this is added a small quantity of baysalt. Some persons, to make it more attractive, add aromatic seeds,—such as cummin, anise, coriander, and caraway. The whole should be mixed up, with chamber-lie, into the consistency of mortar, and placed in a crock, the sides of which are perforated with many holes,

large enough to admit the pigeons heads, and covered with a lid to keep off the weather. The Pigeons will take great delight in it.

It is said that this preparation attaches the Pigeons strongly to their abode, and also that it prevents their picking the mortar from the house-roof, on which account Pigeons are objected to. But the birds, in reality, only eat the loose and weather-crumbled *debris*, and, with their weak beaks, cannot possibly loosen a tile; though, by their running over the roof, they may occasionally cause a loose tile, or slate, to slip down, but which would, in all probability, have fallen the next high wind; so that the damage actually done by the Pigeons is very slight indeed.

Green food may be provided for Pigeons, that do not have their liberty, in the form of lettuce; or salad may be sown in troughs, or boxes, for them to peck off; any smooth-leaved greens will be relished, but it requires to be fast or fixed, to enable them to pick little pieces out. Cress, rapescod, or any of the cabbage tribe, may thus be sown for the Pigeons. As I have before said, the dovehouse Pigeons are usually fed in the poultry-yard; and the fancy Pigeons, that are not allowed to fly out, are fed from the hopper in their aviary, to which they always have free access. The same plan is usually adopted in lofts; but where other kinds are kept in pigeon-houses, or lockers, it is usual to call them by a whistle, or some other known signal, to be fed at some quiet spot near at hand; and on account of the fondness of the birds for a young salad, not so much as food, but simply as a relish, I would advise the amateur not to entice them into the kitchen garden, or they may cause annoyance among the young crops.

There is hardly any kind of grain or corn which Pigeons will refuse, but their preference seems to be given to hemp-seed over every other; yet too much of it is injurious to them; and it has been found, in Germany, that, after the linseed harvest, Pigeons are frequently ill, and die of diarrhoea.

Although Pigeons are granivorous birds, yet they will eat, and apparently enjoy, an occasional change of boiled potatoes, soaked bread, and bacon or ham fat, cut in small pieces; and there is a particular grub, or larva, which they find in old pastures, and eat when other food is scarce.

Pigeons are very cleanly in their persons, and their abodes should be frequently cleaned. They are also very fond of washing or bathing; and Pigeons in confinement, or such as have not a stream or some such place at hand to enjoy their ablutions in, should be occasionally provided with a large pan of water, or a shallow tub, in which to cleanse their feathers.

—B. P. BRENT.

(To be continued.)

OUR LETTER BOX.

TUMBLER PIGEONS.—“I have observed three kinds of the Tumbler pigeon,—those which ascend in the air, and tumble towards the earth; those which tumble while they fly along; and, thirdly, those which tumble off the hand, and cannot rise for this reason. Which of these is most esteemed by the fancier of the Tumbler?”—ONE WHO WOULD LIKE TO KEEP THE BEST.

[High fancy birds are bred to shape and feather. They are not esteemed as Tumblers, for they rarely tumble much. For high flying, those that tumble as they fly along with the flight are best liked. Those of the Dutch, or rollers, are only kept as curiosities from their excessive tumbling. Those that tumble off the hand, perhaps have the wing broken.—B. P. B.]

BANTAM EGGS (*A Subscriber*).—The reason why bantams' eggs should be put under a bantam is, that other fowls are too large and heavy. They break the eggs that are put under them by their weight, and they kill the chickens by trampling on them. But all that is necessary, is to have a very small hen; the breed is quite immaterial.

LONDON MARKETS.—JULY 5TH.

POULTRY.

The cessation of tropical heat enables us to make a more intelligible quotation than we have of late. The supply at market is still very limited, but the demand is falling off, as the West-end season draws to a close.

	Each.		Each.
Large Fowls ...	6s. 0d. to 7s. 6d.	Leverets.....	3s. 0d. to 4s. 6d.
Small ditto.....	4 0 „ 5 0	Pigeons	0 9 „ 0 10
Chickens.....	3 0 „ 4 0	Guinea Fowls .	0 0 „ 0 0
Geese	5 0 „ 6 0	Rabbits	1 5 „ 1 6
Ducks	3 6 „ 4 0	Wild ditto.....	0 9 „ 0 10

WEEKLY CALENDAR.

Day of Mth	Day of Week.	JULY 13—19, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
13	Tu	Aloe depressa.	30.302—30.292	87—47	S.W.	—	0 af 4	11 af 8	47 af 9	3	5 22	194
14	W	Aloe dichotoma.	30.284—30.177	91—48	S.	—	1 4	10 8	1 10	4	5 29	195
15	Th	Aloe distans.	30.056—29.917	89—46	S.W.	—	2 4	9 8	13 10	5	5 36	196
16	F	Aloe latifolia.	29.950—29.834	86—46	S.W.	.22	3 4	8 8	24 10	6	5 42	197
17	S	Aloe saponaria.	30.117—30.014	80—51	S.W.	—	4 4	7 8	36 10	7	5 48	198
18	SUN	7 SUNDAY AFTER TRINITY.	30.181—30.162	79—50	S.W.	—	5 4	6 8	51 10	7	5 53	199
19	M	Alomia ageratoides.	30.147—29.969	86—48	S.W.	—	6 4	5 8	8 11	8	5 57	200

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 74.8° and 51.5°, respectively. The greatest heat, 93½°, occurred on the 14th, in 1847; and the lowest cold, 39°, on the 18th, in 1851. During the period 122 days were fine, and on 95 rain fell.

THE gardening world will be taken by surprise, when they hear that a head gardener has been appointed to the gardens of the HORTICULTURAL SOCIETY, at Chiswick, as a successor to the late Mr. McEWEN. It was reasonably to have been expected, that, in a matter of so much importance to the Society, some publicity would have been given to this step, and that, at least, an opportunity would have been afforded for giving good gardeners the chance of offering for the situation, and the Society the advantage of obtaining a man thoroughly competent for such a charge. A course like that which has been adopted would not have surprised us in days gone by, but that such an injustice should have been perpetrated towards the gardeners of England, under the present government of the Society, is what we were not prepared for. We do not know who is responsible, either for the act or the recommendation of it; but it is high time that the members of the Society, and the great body of the intelligent and respectable gardeners of England, bestirred themselves to rid the Society of such influences. The same course was pursued in regard to the appointment of an Assistant Secretary; and, unless a check be put upon this exercise of arbitrary power and closet-jobbing, the days of the Society will be fewer in number than they are even now by many supposed to be. The Society is entitled to have the offer of the services of the best men that are to be had, for its respective offices; but it is impossible to exercise a choice, or to know who are willing to offer themselves for such offices, unless public notice be given, inviting candidates for election. Let it be known, that in thus exposing the abuse of power, we do not for one moment wish to raise the smallest doubt as to the competency of the party (MR. ARCHIBALD HENDERSON) appointed; but we feel it our duty, as independent journalists, uninfluenced by any consideration but the welfare of the Society, to raise our voice against what we believe all right-thinking men will regard as a piece of intolerable presumption. Like many more, we tremble for the future of the Society; we have, over and over again, recommended the only course that will save it; but the Council, either from fear or apathy, are content to allow the Secretary to stick by it, so that both shall fall together.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

CONTINUE to manure, and trench or fork up every piece of ground, as it becomes vacant.

BROCCOLI.—Plant for successions, and draw earth to the stems of any that have been planted some time.

BROAD BEANS, in bloom, to be topped, to produce strength and fruitfulness.

BRUSSELS SPROUTS.—Continue to plant out.

CABBAGE.—Sow. It will afford a late and very useful supply of young heads. Plant out seedlings of former sowings, for use in the autumn.

CAPSICUMS.—Water, and mulch. They require attention, to fruit sufficiently early to ripen; if neglected, they will not make much growth until the autumn rains set in.

CELERY.—The earliest planted to be gone over, and stripped of their small lower leaves and side-shoots; the trenches to be then thoroughly soaked with water, previously to the plants being earthed-up, which should take place the following day, or as soon as the plants are quite dry.

CUCUMBERS (on ridges).—Mulch with short grass, to keep the earth moist, and the fruit clean.

ENDIVE.—Sow the small green curled, and transplant some of the strongest from the early sowings.

GREEN KALE.—Plant out.

KIDNEY BEANS (DWARF).—Sow in a sheltered situation. The drills to be watered, if very dry.

LEEKS.—Plant out a full crop; clear from weeds; and thin those intended to remain where sowed.

LETTUCES.—Sow a few more, and ply the hoe between the rows, to keep down weeds, and the ground loose.

ONIONS.—Pull up the winter crops. To be carefully laid in rows, with their roots to the sun, and frequently turned over until their stalks are withered. To be carefully handled when storing, as the least bruise will injure them. To be spread out thinly, not laid in heaps, when stored.

PEAS.—Water and stake the late sown.

SAVOYS.—Plant out.

SHALLOTS.—If allowed to remain in the ground, after the bulbs are matured, are apt to mildew and rot in wet weather; therefore, they should be pulled up as soon as the tops begin to decay, and treated as recommended last week.

SPINACH.—Sow a good breadth; it will afford many successive pickings in the autumn, and materially assist to save the winter beds from being picked before they are strong.

TOMATOES.—Water, and mulch their shoots, and stop them above a cluster of fruit. To be kept closely nailed to the wall, or fence, to ripen the fruit.

WINTER GREENS, of all kinds, to be planted-out, as soon as there is a vacant spot to be filled up.

FRUIT GARDEN.

Continue to practise the directions of last week.

The budding of fruit, and other trees, to be carried on briskly during showery or dull weather.

RASPBERRIES.—Thin the suckers to four or five of the best canes, and afterwards tie them up to save them from the effects of high winds.

STRAWBERRIES.—Continue to increase by runners.

VINES (on walls).—Stop the laterals at an early stage of their growth.

FLOWER GARDEN.

As *Petunias*, *Phlox Drummondii*, tall-growing *Verbenas*, &c., are apt to be blown about, and broken, by high winds, it is advisable to stick some small branches of Birch, or other light spray, amongst them in the beds, which assists, not only to protect them, but to give a pleasing variety of outline.

AMERICAN PLANTS, and other evergreen shrubs, will require an abundance of water at their roots, as the showers at this season but rarely reach them, being thrown off by their close, thick foliage.

BIENNIALS and PERENNIALS may be sown, to flower next season; and *Mignonette*, *Collinsia bicolor*, *Virginian Stock*, *Convolvulus minor*, and many other annuals, to flower in the autumn.

DAHLIAS.—Water with weak liquid manure, mulch round the roots, and insert small stakes, to which the laterals may be tied when sufficiently long. Thin out where required.

PINKS.—Continue to put in pipings, and fertilise those intended for seed. Prick out early pipings into good soil, as soon as the roots can be seen. To be shaded in the beds, by sticking small branches amongst them.

ROSES.—Bud. Remove decayed blossoms and insects. As soon as all the flowers of the autumn-flowering varieties have expanded and begin to fade, cut back the shoots to the most promising eye.

WILLIAM KEANE.

THE HORTICULTURAL SOCIETY'S POMOLOGICAL COMMITTEE.

AMONG the arrangements proposed for the resuscitation of the HORTICULTURAL SOCIETY, it was suggested that a Pomological Committee should be formed, which should meet periodically, to determine upon the merits of fruits, to gather statistical information respecting the different varieties, and to ascertain which are the best adapted for different localities; in short, to take up what the POMOLOGICAL SOCIETY has been doing for the last four or five years, with so much success. The idea was a good one; Pomology is a subject which affords wide and ample scope for investigation and experiment; it is one in which all are, more or less, interested, and, unlike the generality of horticultural pursuits, it affords a profitable investment, as well as pleasures and delights. It was always the most popular feature of the HORTICULTURAL SOCIETY, in its best days; and any measure of reputation the Society enjoys, arises almost entirely from the attention it gave to the study and cultivation of fruits; it was reasonable, therefore, to expect that, in the new arrangements for restoring its activity and usefulness, Pomology should receive especial attention. The proposal found favour with the Council, the gentlemen nominated to form the Committee consented to act, the Committee was constituted, and on Monday, the 5th inst., the first Meeting was held, at the Horticultural Society's Rooms, 21, Regent Street. The Meeting was well attended, and among those present were some of the first gardeners in England. Mr. Ingram, gardener to Her Majesty, at Frogmore; Mr. Forbes, of Woburn Abbey; Mr. Spencer, of Bowood;

Mr. Duncan, of Basing Park; Mr. Bailey of Nuneham; Mr. Tillyard, of Heckfield; Mr. T. Moore, of Chelsea; and Mr. Busby, late of Stockwood Park. Among the nurserymen were—Mr. Osborne, sen., of Fulham; Mr. Rivers, of Sawbridgeworth; and Mr. John Lee, of Hammersmith. Mr. H. G. Bohn and Mr. Robert Hogg were also present.

On this, the first Meeting, it was expected by many that there would have been some statement made by the Council, explaining the objects for which the Committee was formed, the work it would be called upon to perform, and the duties that would devolve upon it; that there would have been some form of inauguration, and that the Secretary of the Society, or some one officially appointed, would have been present, to explain the views of the Council, the nature and extent of the powers it delegates to the Committee, and, in a word, to have given it "a fair start." As it was, however, the members present were left to grope their own way, and to constitute themselves. Mr. RIVERS, of Sawbridgeworth, was chosen to fill the chair, and Mr. THOMPSON acted as Secretary.

The Meeting then proceeded to adjudicate upon a *Seedling Strawberry*, from Mr. Ingram, of Frogmore, which was a very good variety, but did not possess any characters, either in regard of flavour, size, colour, or other respects, different from what is to be found in varieties already in cultivation; and, therefore, the Committee did not feel called upon to recommend it as a desideratum.

A collection of *Seedling Strawberries*, from Mr. Myatt, of Deptford, were examined *seriatim*. They were the same as were submitted to the last Meeting of the Pomological Society, and the same decision was arrived at—that none of the seven varieties exhibited were of sufficient excellence, to recommend them for cultivation along with the varieties already grown. Decidedly the best of the whole was No. 3, which had more flavour than any of the others, a good deal of aroma, and a nice pleasant acid.

Mr. Turner, of Slough, sent a dish of the *Filbert Pine Strawberry*, very inferior in flavour; but it was stated by those who know, and have grown, this variety, that this is not its usual character, but that it is generally very highly flavoured.

Mr. Cuthill, of Camberwell, sent a dish of his *Black Prince*, and a *Seedling* from it, without a name. The *Seedling* much resembles the parent, has the same flavour, but is larger. He also exhibited a basket of his *Prince of Wales*, a handsome-looking fruit, with a good flavour, and brisk acid, which the majority of the gentlemen present thought too strong to be agreeable. We are, however, inclined to think favourably of it; if well ripened it will have sufficient flavour and aroma to preponderate over the acid, which is a very agreeable and refreshing one. Mr. Cuthill also sent a plant of another *Seedling*, in a pot, which appears to be a good bearer; but the flavour of the fruit was horrible.

The best Strawberry at the Meeting was *Oscar*, a *Seedling* sent by Mr. Bradley, gardener to W. F. N. Norton, Esq., Elton, near Nottingham. It belongs to a different strain altogether from the others that were exhibited. The fruit is large, and generally roundish, but deeply corrugated, or furrowed, on the sides, and sometimes inclining to a cockscomb shape. The colour is a very dark red, becoming blackish as it attains high maturity. The flesh is remarkably firm in texture, of a dark red colour, and very juicy, with a sweet, peculiar, and agreeable flavour. It is evidently of the "Sir Harry" race, and was considered a valuable addition to present varieties.

A *Seedling Peach*, called *Stirling Castle*, was received from Mr. Carmichael, gardener to the Countess

Dunmore, Dunmore Castle, near Falkirk. In appearance it is large and handsome, of a dark colour, very much resembling the *Galande*; but it was only considered of second-rate quality. The same decision respecting it was come to at the Pomological Society, last season.

From the gardens of the Society were two varieties of Grapes, grown in pots: both were *Muscats*, and perfectly ripe. *Muscat Ottonel* has a loose bunch, like the *Sweetwater*. The berries are small, round, and of a white colour, having a marked musky flavour; but the flesh is squashy, and the juice thin and watery. *Muscat Noir* has also a small, loose bunch, with small, black, thick-skinned berries, the flesh of which is firm, and the flavour deficient.

The examination of the fruit having terminated, a conversation arose as to the future. It was the general feeling, that the next Meeting should take place at the Garden; and it was also considered advisable, that reports of the Meeting should be forthwith printed, and circulated among the Members. But it was discovered that the Committee has no power to carry out these arrangements, without first submitting them to the Council for approval; and, therefore, the resolution must, for the present, remain in the character of a recommendation, till the "fountain of honour" has taken it into consideration.

We very heartily wish this Pomological Committee every success, and we give great credit to those with whom the suggestion originated, for their wisdom in thus endeavouring to restore to the Society its former prestige; but we cannot see how it is to be carried on. A body of any kind, it matters not what, to work well and effectually, must be untrammelled, or must, at least, have a certain amount of freedom of action. If you muzzle your dog, or manacle your slave, you do not prevent action or locomotion: but the one cannot hunt, and the other cannot work; what then is the use of either? Red-tapism, dictation, arrogance, and conceit, have hitherto been the bane of the Society, practised as they have been by those who knew not how to use the power entrusted to them. But we earnestly hope that these belong now to another, and a bygone generation; and those to whom the Society has delegated the governing power will act with that promptitude, and liberality of feeling, which alone can insure success, regardless of ancient traditions, and spurning any remnant of the old leaven that may still be found among them.

ROSE CULTURE.

THE most unaccountable thing about Roses, is the way they flower so well, and live such a length of time, as they do here about Kingston, and on both sides of the Thames, for miles on each side of us, where the soil seems as light and poor, to the touch and sight, as to be hardly fit for Turnip husbandry. Mr. Bohn, the enterprising publisher, gives a Rose feast every year, at Twickenham, and Mr. Byam Martin, of Bank Grove, near Kingston, does the like on the lightest kind of moorland, or black sandy soil, in the kingdom. The late Mr. Jenkins, brother to the great Lord Liverpool, and the first and most successful cross-breeder of Geraniums in Britain—the section of them called *Jenkinsonia*, is named after him—was celebrated during many years for his splendid Roses, within a rifle-shot of the market-place of Kingston, where the soil is equally light. Hampton Court Gardens is like a sand flat; but this vast Rose district is flat for miles and miles, and only a few inches above the level of the tide. Some of the Roses, which Sir John Broughton planted thirty years ago, are now as healthy as ever at Bank Grove. The soil in the Experimental Garden is of

the same light nature, so light, indeed, that the Strawberries went out of course this hot summer; yet all the Roses were never finer; every one of them could stand the competition at St. James's Hall; but the florists did not give us the chance. After sending me a pot-luck invitation two days before the Show, I could not get hold of one of their schedules, or bill of fare, for love or money, and as to how the "courses" were served, I was all in the dark. That is the second "most unaccountable thing," and the only thing to account for my not finding out that Mr. Turner, of Slough, was the author and finisher of the handsomest Rose devices I had ever seen; but which I did not test with my *chemicals*, as I should have done, had I known the maker, because Mr. Turner is the only florist I know who has a lady's eye for doing things floristical; and because I can never enjoy a thing done with flowers, unless a lady, or a lady's eye, has presided over it. And I hold it to be impossible for any writer, even the Doctor himself, to write an interesting article upon a subject in which he can take no interest himself.

The third "most unaccountable thing" is, that all the world do not grow their Roses from cuttings and layers, so as to have them all on their own roots, and to have no standards, but pillar Roses instead. Standard Roses, say what you will, are no better, in giving effect, than the Doctor's "fly flappers." I would have dwarf standards,—say with three feet clean stems of every plant and bush that could be so made,—and yet not a standard Rose, as at present cultivated, except the climbing Roses, and they are all worthy of being worked on the strongest stocks of the Dog Rose, from seven feet high and upwards, to mass and sweep down to the ground. All the very strong Roses I would have on standards from thirty inches to three feet in the stem,—not higher for all the world,—and I would treat them quite differently from the usual way of managing standard Roses; I would let them grow as tall as their strength allowed them, and keep them in the form of pyramids all the while,—pillar Roses, in fact,—which could not sucker from the bottom, and which would allow of spring flowers and bedding plants to be used under them and amongst them, if one so choosed, or selections of the dwarf and moderate-growing Roses, which never do well on standards, and ought most certainly be on their own roots. The system is not a new idea; the oldest Roses at Bank Grove have been so treated these five-and-twenty years back, and there is nothing in the kingdom like them. Some of the good kinds of Roses there, which have been thus managed, are all but lost in other parts, through sheer mismanagement, or, rather, through tight-lacing, in this wise. A lady, or a gentleman with a lady's eye, has a clump, or bed, or an avenue of standard Roses, all worked on the Dog Rose, of course: from the different natures of the kinds they require very different degrees of pruning; but the "eye" must have them symmetrical—all to be near the same thing in shape and size of head. This is impossible for any length of time, because some of the kinds grow four times faster, and to greater bulk than others; and, to make an impossibility seemingly possible for awhile, all these standards are pruned symmetrical, or all alike. After the while, the stocks which bear the weakest-growing Roses begin to languish, for lack of the necessary supply of food. The heads have not sufficient strength to answer the vigour of the roots, and "hide-bound" is usually the first symptom of derangement. From that day, and for ever, that Rose is ruined; for all the management on earth will never cure a stock whose head has reached the utmost limit of its strength, and yet lacks the strength which is needful to keep the stock healthy. Therefore it is tight-lacing a stock to work a moderate

grower on it; and strangulation is the certain fate of a stock on which a dwarf kind of Rose is worked; that is, assuming that the stock is the Dog Rose.

On the other hand, the symmetrical style of pruning all the Roses in an avenue, has, by this time, operated differently on the strong, robust-growing kinds. Being cut so close, they come out so strong as not to flower at all, or not half so well as they ought. Root-pruning the stock makes but a temporary shift in such cases, and if the Dog Rose stock itself gets once hide-bound by root-pruning, it will be every whit as bad as the other case. Well; but work on the Manetti stock,—it has hardly one-third of the strength of the Dog Rose,—and it will strengthen the dwarf kinds without weakening itself.

A fourth unaccountable thing is, that the Manetti Rose does not do on many soils. It does not answer at all hereabouts. It is the worst of all the stocks that have been tried near Kingston, for no Rose will live more than three or four years on it, and be in health. It is the same with *Gloire de Rosamene*. I never saw a plant of it in this Rose country worth looking at; and when all dwarf Roses will be grown on their own roots, it will be just the same. In some gardens, some kinds will not do; and with all our science and skill the fact is unaccountable.

To have strong-growing Roses always healthy, the heads must not be pruned close, as above; and to have the Dog Rose in health and vigour, for twenty or thirty years, no cultivated Rose is too strong to work on it. No Rose which is a vigorous grower should be confined to the usual compass: July is the best time of the year to begin the change. As soon as the first bloom of Roses is over, the heads should be summer pruned, and well thinned, and not an inch of weak wood should be left at this pruning. Keep to the strongest shoots, they are not too strong for the roots of a Dog Rose stock; they will soon break, and be able to carry the autumn bloom far better than under the present confined system. Cut out the weak wood again in winter, and merely shorten a few inches of the very strong shoots; you will soon have a pyramid, but never attempt to have *two different Roses to match*. Make your matches with pairs of one kind.

A Rose tree will soon come to its full size under this system; after that, the chief thing is to keep the head thin with the moderate-sized shoots, cutting out the weak and the very strong shoots, and keeping the outline regular. At the July pruning, is the best time in the year to make Rose cuttings for out of doors. The small side shoots, from the pruned wood, will make the best kind of cuttings; have them with heels, and from four to five inches long; the four top leaves will be enough. They will soon root, and sooner under handglasses; and they will be fit next February to plant out in nursery lines in the kitchen garden.

D. BEATON.

RANDOM GLEANINGS.

HARDINESS OF THE SEEDS OF TENDER PLANTS.

IN previous numbers, Mr. Beaton has directed attention to this subject. The only difference, between what I have noticed and his deductions, was the comparative inutility of early sowing. I do not know how it is, but it has almost been a general fact with me, that seeds at all tender, when sown early, not only do not appear until the ground is sufficiently heated, but, even then, they come up much more irregularly and patchy, than when sown a month or six weeks later. For instance, many people sow Mignonette in March and April, and I have done so; but I never succeeded in getting a fine,

healthy, uniform row, if I sowed before the middle or towards the end of May. Natural-sown seeds would come up earlier, and what is strange, will often, at first, look more healthy than plants from seed sown carefully by the hand. This has often puzzled me, and, I believe, is owing to the fact, that the seeds scattered from the plant—at least those of them that grow—are almost certain to be little covered. We may sow seeds early, and cover them as carefully as we can, yet this covering, if the ground is at all loamy, is apt to enclose the seeds in an air-tight covering after heavy rains, and thus make germination impossible. Hence the importance of sowing all seeds in the open air when the ground is dry. The seeds, from the moisture even then in the earth, and the free admission of air, begin to swell at once. If coated with loamy, moist soil, air is excluded, and the seeds either rot, or refuse to vegetate. Seeds thrown from the seed-vessel on the surface of the ground, may, in many cases, be scorched up by the sun; but, in many cases also, they may just be sufficiently sheltered by the crumbings and the interstices of small lumps of soil, as to be in the best position for germinating, whenever the heat is sufficient for that purpose. Few things feel the first effects of frost more than the tender Purslanes, such as *Portulaca splendens*, *Thellusonii*, *grandiflora*, and their varieties; and yet the self-sown seeds pass the winter apparently uninjured. In a late volume, I mentioned how beautiful some ribbon borders of these looked at Luton Park. On these borders, and on stumps of trees, &c., where the plants had been allowed to ramble, the self-sown seedlings have come up thick enough to supply a county with plants.

ELEVATING INFLUENCES OF FLOWERS.

Some years ago, I gave a short description of Tingrith, and mentioned how nicely the front of the stables was ornamented with flowers, rustic baskets, and vases, &c.,—the work chiefly of the groom, who has been a long time connected with the establishment. I saw the place the other day, and found that this, like the other departments, had not been standing still. The chief addition was the formation of a little fountain, in the middle of the flower-border, supplied with a centre jet,—and squirting lesser jets all round the circumference,—supplied from an elevated barrel placed behind a fine Laurel bush. Just as I expected, I found, on inquiry from Mr. Manning, that no trouble was experienced from such servants; that their work was thoroughly attended to; and that keeping all these plants and ornament in good order, furnished recreation and amusement. In such circumstances, I have uniformly noticed, not merely an apparent contentment and happiness, but also a speaking intelligence in the countenance, and an obliging and gentlemanly deportment. I lately read an article by a kind-hearted man,—well aware of the ameliorating influence of gardening,—and yet, at the same time, so convinced of the importance of keeping the Sabbath-day sacred, and free from all secular avocations, as to recommend to landlords the propriety of taking away the gardens and allotments, from those who would *persist* in working in them on the first day of the week. What would be most proper in a case of persistence in the face of kind remonstrance, I would rather not be under the necessity of stating; but, considering that anything like force in such matters is the weakest of all arguments, and believing that gardening itself is a bettering and improving agency, I should be very sorry,—unless in an extreme case, or where the good of a greater number was concerned,—to be the means of removing that one elevating influence from a man, when all others, even of a higher character, may have lost their hold upon his affections and judgment; knowing that, even in such cases,

thoughts in a garden have become the happy turning-points in a man's career.

FORMATION OF A ROSERY.

I have seen this done in many ways, and perhaps equally effectual as a whole; but there could hardly be a more simple, and more pleasure-communicating mode, than that adopted at Tingirth. A small circular bed forms the centre; and circular gravel paths, about two feet and a half wide, with box edgings and circular beds between them, of from four to five feet in width, are supplied with standard and dwarf Roses. These may be divided by cross walks, according to taste; and, if climbing Roses were also intended to be a feature, the walks might be made wider, and crossed at intervals with arches. The walks being gravel, and the beds of an uniform narrow width,—at most, not exceeding five feet,—ladies could have no difficulty in getting to, and examining, all their Roses, at all times, unless when actually raining. The simple circular outline carries the eye and the foot pleasantly along, in examining bed after bed. I have noticed, that when people carelessly saunter over a road or lawn, the feet almost instinctively form curves in their progress. A person reading, or blindfolded, will hardly ever take a straight course. Hence, partly, the pleasure with which most minds contemplate curved lines. When a suburban gardener honours me by asking what shape his single flower clump should be, I almost invariably recommend a circle or an oval, to the exclusion of the whole paraphernalia of gimcracks and stars and garters.

A mode of arranging a large circle for climbing Roses, round a fountain and rough rockwork, in front of the houses in the kitchen garden, was also very effective, though artistic and artificial in appearance. The Roses are trained to a trellis,—say, to a height of four feet,—the trellis being bounded by a stout iron rail. On this rail, all the way round, are erected, by means of iron rods, equilateral triangles, or nearly so,—the high point of the triangle being some six or seven feet or more above the rail. From the point of the triangle another rod is subtended to the rail, which thus cuts each triangle into two right-angled ones. Up this middle rod, and the two side hypotenuse lines, the Roses mount, and formed last week perfect clusters of Roses. All of these were white: a good many the delightfully scented *Ruga*. Mr. Manning proposed, and planted, and budded, darker ones for variety; but the ladies objected to any but the white, and no doubt they had good reasons for doing so. The circular outline, and the points of the triangles, with the regular sloping lines of masses of Roses, had a fine effect. In many positions, stout rods, elevated as high, or higher than the points of the triangles, and connected with each other by festooned chains, would have been quite as pleasing, as the curve would then come in for its attractions: but the idea of the artistic and the artificial would not be so prominent.

EARLY FRUITING YOUNG VINES.

I have frequently done this from necessity, but never without greatly repenting it. The system with vineries is penny wise and pound foolish. It invariably cripples the Vine for after years. I once saw strong Vines planted, cut down to the sill, and form fine, well-ripened rods the first year. They seemed so strong and healthy, that the gardener thought himself justified in taking a good crop the next season. The Vines never did much good afterwards. Mr. Manning planted Vines in a new house, three years ago, planting both at the front and at the back of the house,—the former to be trained up the

usual way, the latter to be trained down. I noticed little difference between them, though, if anything, those coming down the glass might be the shortest jointed. On each of these Vines, in the third year, were only a few bunches,—but then they *would be bunches*; and the rods, with fine foliage, were like walking-sticks, and with fine, round, prominent buds at the axils of the leaves. A lateral was left at each bud, stopped at the first joint. From the size of the foliage, little more would have found room. This wise parsimony, as to cropping at first, will tell in the Vine's favour ever afterwards. R. FISH.

PEARS IN SUMMER.

FAMOUS as Britain is for fruits in general, still there are ever prevailing most unsatisfactory results, in one quarter or another. But we are allowed, and allow ourselves, to be a nation of grumblers. They say that the climate is at fault, and who shall dispute it? Why all this fuss about orchard houses? and not only fuss, but considerable expense, if such be not the case: this surely cannot be all whim. The builders of these orchard houses, however, must please to remember, that such will have both expense and inconvenience in their train, albeit so much talk of their simplicity and, of course, economy. I would be the first to recommend orchard houses, where a honest-hearted, sensible, and fair-play consideration of what they are, and what labour they occasion, was entertained: the first to condemn them when they are jauntily adopted, and without a far-seeing eye. In squeezing an Orange impulsively, you are in danger of losing the precious juice stored up in some other cranny; whereas, by an uniform squeeze, and a sensible and considerate one, you may better accomplish the real desire of your heart. Our indoor fruits in Britain are sufficient testimony as to the climate matter indoors: for where are such Grapes, Pines, Peaches, Nectarines, and I may even add Melons, to be found,—taking the best qualities that are recognized in fruits, of pulp, juiciness, freshness, and exquisite flavour?

These things admitted as facts, we have a just right, I conceive, to say, that we are less favoured overhead than some of our more fortunate neighbours, on the other side of the water, who live a little nearer the sun; and it behoves us, with that kind of ready adaptation to difficulties for which John Bull is noted, to remedy this natural deficiency by extra appliances.

Pears are at once one of the most useful and most bothering of our fruits. That they are very useful, the winter dessert-table bears witness. For nine months, indeed, we may have Pears on our table; and, with all our grumbling, we may have good ones for half-a-year, without rummaging all the names in the catalogue.

One of the worst faults of Pears, in a trained state, is to produce an enormous amount of breastwood: and when we look at the pretty little, neat, and well-turned natural spurs, which seem to have good Pears written on their frontispiece, we naturally lament that those bothering breast-shoots had not been of their character. Moreover, we hear so much about what science can effect, that we are ever ready to think, that there must be some culture which will heal these disasters. The fault here is, beyond all doubt, traceable to the soil they are planted in; it is too good, too open and free,—of which more in the sequel. It becomes necessary to remove totally a considerable portion of this young and succulent spray, especially that which springs from the main shoots, and unattached to any spur or spurs; unless there be any

special reason for retaining it, such as nakedness of the branches, in which case it is best to tie it down, on the naked portions, just pinching off the end.

But there is, also, generally a profusion of spray springing from amongst, or by, the spurs, and this must be done something with. It is a very common opinion, that if this is much meddled with, until late in the summer, the consequence will be, that the real blossom-spurs will burst. Such may be sometimes the case, but the opinion has gained by far too much weight. Indeed, but very few that are of a decided character, if any, will push into wood if the process is performed at Midsummer. But the safest plan, as I think, is, after totally removing a portion, to go over the others, and pinch all the strongest shoots; then to let them alone for a week or two, and, when the pinched shoots begin to sprout again, to remove a portion, and each week to remove a few more, and so on until no more spray is left than is needed. In performing this thinning, a judicious selection must be made, if the young spray to be retained is to be trained in or tied down. There is much more difference in Pear shoots than might at first sight be imagined, even on the same tree. In general, however, the very shortest or closest-jointed must be reserved; and, as to colour, the fruitful shoots, or rather those which have a tendency to become so, are browner or fuller of colour. Those that are highly attenuated, and grown with the greatest speed, are by all means to be avoided. With regard to how blossom-buds are formed or perfected, much of the barrenness complained of arises, no doubt, from the want of light and air.

Only consider the difference, as to the proper access of these elements, between the wall tree and the ordinary standard. A wall Pear half smothered with spray! how is the light and air to reach the future blossom-buds, which lie buried, as it were, in the very interior? They may as well be in a dark wood. Thus, during the most growing periods in summer,—June and July,—there is every tendency, in June in particular, to assume an undecided character. It is scarcely possible to imagine, that they can become perfect blossom-buds. Besides, not only sunlight, but air is excluded, and there can be no doubt, that a circulation of air is almost as necessary as sunlight. The standard tree, on the contrary, although possibly as full of spray, presents so many crannies for access of both light and air, that the difference is very considerable, and may strike the most superficial observer. Hence the common remark, that ordinary standard trees produce better crops, or, at least, more blossom-buds, than the primly-trained trees of the kitchen garden. It thus behoves the trainer, to endeavour by all possible means to open his trees to the light, and to this end I recommend, that all superfluous wood be trimmed away by the middle or end of July.

But these are simply curative measures; we had better look into those a little which are of a preventive character. The chief point to be attended to, in planting Pears, is so to make the soil, or to handle it, as to prevent a rapid root action, yet to render it permanent and steady. Shallow soils offer many chances of reducing gross habits, but then, if carried too far, the Pears will be liable to crack, or become gritty. There is little harm in depth of any reasonable or natural kind, providing the bottom is sound, and that water cannot lodge. But, then, what about its consistency? It may be light and porous, it may be sound or stiff, and somewhat compact. The latter I recommend, providing, as before stated, a free and perfect passage for water be maintained. The question then arises, how is such to be provided?

Now, although it is not planting-time, a few remarks, which I feel desirous to make, will not be out of place

whilst talking about Pears,—by the old maxim, “let us strike the iron while it is hot.”

In the first place, I assume that Pears are not very fastidious as to soil; composts, in the ordinary acceptation of that term, they abhor; or rather, I ought to have said, they are too partial to them. In the first sense, I meant that these composts were averse to blossoming; in the latter, that the roots would greedily devour composts. If I wanted to grow a crop of good eating and delicate Pears, I should lay my account with simple soils. But if I wanted to produce timber, I should dig very deep, and manure well. Those who are enclosing a new garden, where the soil is of a fair order,—suppose an enclosed field,—would be acting wisely, in my opinion, in planting Pears on the firm, undug soil, or, at least, digging it only a single spit, without manure, or only as much as would be necessary to start the young trees.

Of all the errors as to Pear culture, none can be greater than that of rendering the soil so loose, to a depth of some two feet or more, that the Pears can root with as much freedom as they choose. Such cultural operations are better fitted for Cabbages or Asparagus, than Pears. Our readers may depend upon it, that it is this freedom of root which is the cause of so much breastwood; indeed, to what else can we ascribe it? As to manures of any kind, they are almost out of this question; even ordinary vegetable matter is too compliant with the vigorous action of the Pear root.

Those, therefore, who have Pears thus circumstanced—and this comprises three-fourths of the gardening community—must betake themselves to root pruning in due season. As to the pinching back, or disbudding, of watery laterals, that is forced upon us. What else can be done in summer time? But what, let us ask, are the necessary results. In May we will date the first proceeding, that of disbudding entirely those very gross young shoots, which bid fair to become too extravagant. Now, of course no person can perform an act of the kind without some result following; and this consists in, for a little while, checking the too violent action of the root; for, depend upon it, there is a perfect reciprocity between the root and the growing spray. What affects the one, must necessarily, in a corresponding degree, affect the other. The over violent action of the rootlets is, therefore, impeded in a corresponding degree; but only for a little while, for an increased impulse is speedily given to a secondary character of shoots; and, if a rainy period occurs in June, some of these will soon bid fair to become as arrant monopolists as their predecessors. What then? Why the same course has to be repeated with the foremost of them. But, in the meantime, many, or most, of the shoots left, may be pinched. This becomes a more severe check still to the fibres. But, in a short period, the pinched shoots will sprout again.—This is the ordinary history of more than half the Pears in the British Isles.

I need scarcely observe, how unsatisfactory all this is to men of science, or those who have acumen enough to see, that it is but a temporising and tampering with a state of things which ought to have been prevented. Such must also be struck with the fact, that hundreds of clever men, not alone mere practicals, but persons with minds and observation equal to their own, have been completely puzzled with these awkward matters. But let our studious, learned, and scientific men try their hand,—and they have done so,—and they soon find that the deductions of the closet are not so very easy to reduce to practice. Our untoward seasons, the fitful action of soils, &c., and the constant depredations and teazings of insect enemies, fungi, &c., are unknown to the desk of the learned; and I must confess, that

whilst I am writing this, I underrate ever-recurring and conflicting cases which beset the gardener. I really wish that the very ink I write with, could be made more pungent and destructive, than tobacco-water, sulphur, &c., and that my quill were more powerful than the brush.

R. ERRINGTON.

HARDY FERNS.

(Continued from page 191.)

SOIL FOR THE HARDY FERNERY.—The soil for small-growing species should consist of sandy peat, decayed leaves, and fibry loam, in equal parts, well mixed together, but not sifted; add, also, about one-eighth of old lime-rubbish. For large coarse kinds good common loam will answer well enough, where the other materials are scarce or difficult to procure. In my last paper, I noticed that hardy Ferns love shade and moisture. The latter may be applied with the syringe in very dry weather in summer; but discretion must be used in applying moisture at the root too copiously, and it must cease entirely when the fronds begin to decay in autumn, as the rain then will be amply sufficient. To keep them tidy, cut away the decaying fronds. Rare delicate species should be protected in very severe frost, by thrusting in around them some branches of evergreens—renewing them when the leaves fall off or turn yellow.

I now proceed to give a brief list of the best kinds to plant out in the hardy fernery.

Adiantum capillus Veneris. This requires to be grown rather high up on the rocks, and protected through severe winters.

A. pedatum. Requires protection in winter, and shade and moisture when growing. A handsome species. It is from North America.

Asplenium adiantum nigrum. Hardy and beautiful. Should be grown rather elevated.

A. Germanicum (alternifolium). Rare.

A. fontanum. High and dry; a rather tender species.

A. acutum. Hardy and beautiful; high situation.

A. marinum. Requires moisture, and occasionally watering with slightly salted water.

A. marinum. There are two varieties,—one named *trapeziforme*, very rare; and the other *ramosum*, the fronds being much branched; distinct and beautiful.

A. lanceolatum. Not uncommon, yet very pretty; requires a slight protection in winter.

A. microdon. A newly-discovered species; as yet very rare in collections.

A. septentrionale. A delicately beautiful Fern; hardy enough, if slightly sheltered in winter. Should be grown in crevices of stones or rockwork.

A. trichomanes. Found on old walls; common. There are several distinct varieties of this pretty Fern, described under the names of *cristatum*, *incisum*, *depauperatum*, and *dichotomum*, all quite hardy, though as yet rather rare.

A. viride. A beautiful evergreen dwarf Fern. Variety: *bifidum* (twice branched); a pleasing variety.

A. ebenum (North America). A pretty low Fern.

A. angustifolium (North America). A narrow-leaved, erect Fern, of great beauty.

Allosorus crispus. A pretty, low, Parsley-like Fern; high situations.

Athyrium filix-fœmina (Lady Fern). One of the most elegant Ferns of Britain; common on shady hedge banks near water. Varieties: *inexpletum* (new), *purpureum*, *erosum*, *multifidum* (beautifully tasselled at the end of each frond), *monstrosum*, *crispum* (Parsley-like), and *latifolium*.

Blechnum spicant. A common, well-known Fern; loves shade and moisture. Varieties: *Multifidum*, barren fronds, sometimes from once to thrice branched; *heterophyllum*, fronds variously branched, a truly distinct variety, and very beautiful; *ramosum*, fronds much branched, a very rare and unique variety.

Botrychium lunaria. A low-growing, elegant Fern, requiring a level situation, in sandy loam.

B. fumaroides. A North American species; curious and pretty, with the fronds thrice divided.

Botrychium Virginicum (Virginia). Similar to the last, but less divided. Both these require very sandy peat.

Ceterach officinarum. Found on old brick walls; a beautiful species.

Cystopteris fragilis. An elegant, not rare, British Fern; loves shade and a moist atmosphere. Varieties: *Angustata*, narrower fronds; *Dickieana*, very dwarf; *multifida*, much divided at the points; *decomposita*, new and fine; *alpina*, very dwarf; *rhætica*, and *montana*.

C. bulbifera (North America). Distinct, and easily increased by its ball-like bulbs on the fronds; very hardy.

C. tenuis. A slender North American species; very hardy.

Dicksonia pilosiuscula (North America). A spreading, tall, free-growing Fern. I have seen one plant cover several yards in a short time. It is very handsome, but must have plenty of space. Variety: *Nova Scotia*, fronds narrower and stouter, and not so hairy as the species.

Lomaria alpina. A neat, low-growing, compact species; requires to be grown high up on a bank. Variety: *Major*, barren fronds, erect, longer, and more tapering.

L. Chilensis. A large species; stood the open air last winter.

Lastræa Thalypteris. Free and hardy.

L. cristata. A distinct species, of free growth, easily cultivated.

L. oreopteris. A beautiful species; will grow in exposed situations. Variety: *Multifida*, fronds much divided.

L. rigida. A rather rare, pretty species.

L. Fœnisecii. A remarkable species, with fronds very much recurved. Variety: *prolifera*, bears little plants on the lower part of the fronds.

L. cristata. A tall, handsome Fern; easily cultivated.

L. dilatata. Common on hedge banks, and very distinct. Varieties: *Nana*, very dwarf; *collina* (hairy), *dumetorum* (bushy), *Chanteriae*, a curious variety; *lepidota*, bears seed-vessels on every part of the fronds; *interrupta*, fronds separated.

L. marginalis (Margined).

L. Goldiana. Triangular fronds; rare and beautiful.

L. Noveboracensis (Northern).

L. intermedia (Intermediate); a distinct species.

L. decurrens (Decurrent); that is, deeply divided.

L. spinulosa (Spiny). Varieties: *uliginosa*, (marsh), *Schofieldii*, a very dwarf, pretty, scarce variety.

L. filix-mas. A fine Fern, but very common. Varieties: *abbreviata*, shortened. *Cristata*, a most beautiful variety, every frond in all its points being, as it were, frilled, and formed like a fish's tail. There is a variety of this variety, which is named *paleacea cristata*, a truly splendid one, with its fronds covered with chaffy scales, and placed in a complete circle round the rootstock. *Crispa*, curled fronds, one inch wide and four inches long; branched and curled at the points; a very remarkable variety. *Cristata angusta* (narrow crested); a constant and very remarkable variety; the fronds, spread symmetrically round the rootstock, bending gracefully; the ends densely tasselled, and the points of each of their divisional parts formed of a series of little crests, one beyond another; a remarkably beautiful variety, entirely as yet in the hands of that eminent cultivator, Mr. R. Sims, of Foot's Cray.

Onoclea sensibilis. This handsome North American species has its fronds, when young, of a purplish hue, but when fully grown they change to a beautiful light green; the fertile fronds have no leaves, are erect, and in spikes.

Osmunda regalis. Our own royal and noble Fern. To grow it well, it should be planted in a moist situation.

O. cinnamomea (North America). Quite as handsome as the foregoing species.

O. interrupta (North America). Barren fronds pointed, long, oval, twice divided, and spreading; fertile fronds contracted; a very beautiful species.

O. spectabilis (North America). A beautiful Fern; more delicate in all its parts than any other in the genus. There are two imported varieties, or perhaps species, but they are not well understood. All the *Osmundas* require shade and moisture in summer.

Polypodium vulgare (common Polypody). Found on hedge-banks and old walls. Varieties: *auritum* (eared); *marginalatum* (margined); *bifidum* (cleft), not constant; *semilacerum*,

(half-torn); *multiforme* (many-shaped), a large growing variety.

Polypodium Alpestre (Rock). Variety: *flexile* (bending).

P. Dryopteris (the Oak Fern). Requires a light soil, and shade.

P. Robertianum, or *calcareum*. A delicate creeping Fern.

P. Phegopteris (Sun Fern).

P. Virginianum. Very rare; a North American species.

Polystichum acrostichoides. Fronds two inches wide and eighteen inches long; curiously contracted towards the upper part, which is the part where seeds are produced.

P. Lonchitis (the Holly Fern). Very beautiful; found chiefly on the Yorkshire and Scottish mountains; easily cultivated.

P. angulare (the Angular Fern). Varieties: *Proliferum*, bears little plants on its fronds; *proliferum* var *a*, very finely divided fronds, extremely beautiful; *proliferum* *b*, stems beautifully clothed with white scales; *imbricatum* (overlapping); *dissimilar*, fronds very spiny; *subtripennatum* (three divided).

P. Braunii. A dark green, soft-looking variety.

P. frondosum, *P. falcinellum*, *P. proliferum*. These three foreign species have proved to be quite hardy.

Pteris aquilina (common Brake). Variety: *Americana*, moderately distinct.

Scelopendrium vulgare (the common Hart's Tongue). Found wild in various situations. I once saw a steep bank, in an open wood in Ireland, completely covered with this fine Fern. The species has sported wonderfully. I saw in Mr. Glover's collection, near Manchester, fifteen distinct varieties, all growing well. Varieties: *Abruptum* (short cut), *crenato-lobatum* (crenated), *crispum* (curled), *crispum majus* (greater eured), *crispum minus* (lesser eured), new; *contractum* (contracting), *crassifolium* (thick-leaved), *cristatum* (erected), new and rare; *cristi-galli* (cockscorn), *chelæfrons* a small-growing Crab's Claw like variety; *cornutum* (horned), *complicatum* (complicated), very curious and very dwarf; *depauperatum* (impoverished), *digitatum* (fingered), *fimbriatum* (fringed), *fœniculum* (fruitful), *fissum* (cleft), a tall variety; *glomeratum* (globular), like a globe, and very rare; *laceratum* or *endiviaefolium*, like Endive, both plain and eured, very fine; *lacerata-marginata* (torn margins), *marginata* (marginated), *sub-marginatum* (smooth margins), *ramo-marginata* (branched margins), very curious; *macrosorum* (large sori or seed-vessels), *multifidum* (many times cut), *multiforme* (various formed), the finest of all the varieties; *polychides* or *angustifolium*, fronds very narrow; *proliferum* (bulb bearing), *pumitum* and *pygmæum*, very diminutive, the first being only one inch and the second half an inch high; *ramosum* (branched), *ramosum majus* (large-branched), distinct on that account; *sicæforme*, wavy fronds, long and narrow; *simplex* (strap shaped), *supralineatum* (lined above), *saggitatum* (arrow shaped), very handsome and very rare; *suprasoriferum*, sori bearing above; *undulata lobatum* (lobe waved), a rare and handsome variety.

Struthiopteris Pennsylvanica and *S. Germanica*. Two exotic hardy Ferns, from America; perfectly hardy.

Hymenophylla Tunbridgensis and *H. Wilsonii*. Filmy Ferns, requiring very fibry, spongy, peat, with plenty of small stones, or well-burned cinders, mixed with it. Keep them constantly shaded, and under bell or handglasses. Sprinkle them twice a day in warm weather.

Woodsia hyperborea. Rare.

W. Ilvensis. Rare.

W. obtusa (North America).

W. rufiduta (North America).

Trichomanes radicans (the Irish Fern). Requires the same treatment as the *Hymenophyllums*.

Woodwardia angustifolia (North America). Perfectly hardy, and as handsome as *Onoclea sensibilis*.—T. APPLEBY.

PEGGING DOWN VERBENAS.

YOUR correspondent, "H. J. BUCHAN," gives the price of hair-pins for pegging down Verbenas. I would advise him to use the galvanised wire instead, as that does not rust, and will last for years. I have used the same pins for three years: this will be the fourth. The wire-like en-

closed sample can be purchased here (Norwich) at 6d. per pound, which will make between 600 and 700. Any boy can cut and bend them.

Living, as I do, in a large town, and not keeping any horse, I find great difficulty and expense in getting stable-manure. Can you inform me if an artificial manure will answer for flower and kitchen gardens? and which is the best to use? Also, what quantity per rod?—W. O. D.

[These pins, of this shape, made of stiff galvanised wire, are the best and cheapest we have seen. They are made more easily than of sprays, are more easily thrust into the ground than they, or matting loops, are, and are so cheap, that the largest establishment need not fear the cost of them.]

For manure, use your own house sewage. Mixed with gypsum and charcoal powder it is inodorous. We know a garden where none other is used, and the Asparagus, Rhubarb, &c., are excellent.]

THE FRESH-WATER AQUARIUM.

(Concluded from page 209.)

DIVIDED AQUARIA.

THESE are necessary in cases where both harmless and noxious insects or fish are to be placed in the same tank. The divisions shown by dotted lines are of thin glass, being fixed at top and bottom.

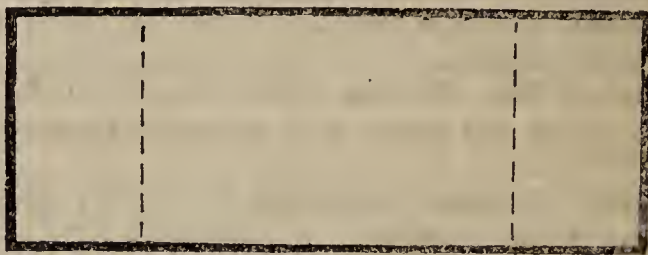


Fig. 1.

Fig. 1 represents the plan of an ordinary aquarium thus partitioned off; and Figs. 2 and 3 are fancy tanks, the former

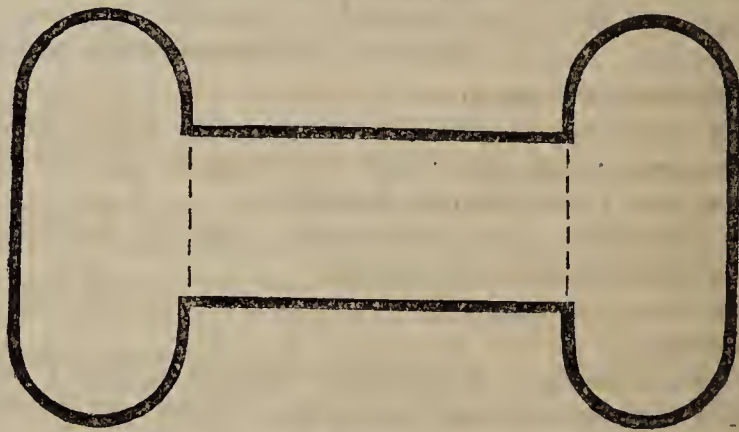


Fig. 2.

intended for the reception of fish in the centre, beetles to the left, and lizards on the right; the latter providing two

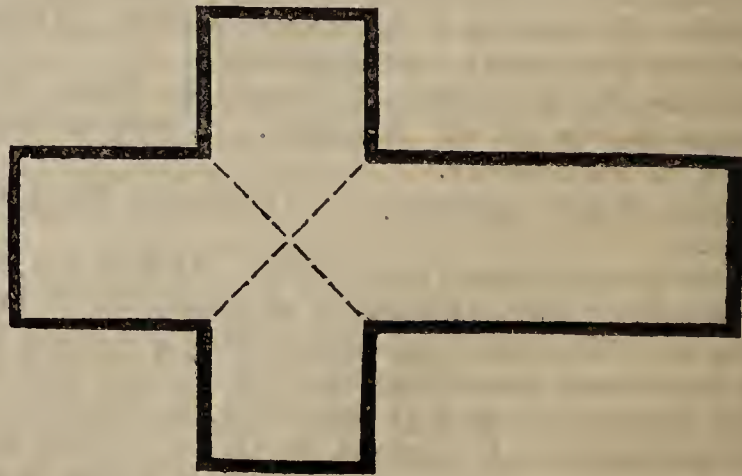


Fig. 3.

divisions (back and front) for beetles and lizards on the left; and fish in the larger rectangular space.

AQUARIUM APPARATUS.

The few instruments required for the fresh-water vivary are of a very simple character.

Procure some pieces of clean flat wood, one-eighth of an inch thick, and six inches longer than your tank is deep. Split these into pieces half an inch in breadth. To one, affix a piece of well-washed sponge at the extreme end; to another, a small new nail brush. Join two pieces crosswise, two inches from the bottom, rivetting through with a pin at the junction, thereby forming a kind of forceps. Fasten a ring of copper wire to another slip, and, with a piece of common cap net, form a conical net on the wirework. Lastly, tie a wooden strip to each handle of a pair of small scissors.

Of these implements, Nos. 1 and 2 are for clearing any vegetable growth from the glass sides of the vivary. No. 3 is handy for removing any decaying matter, or dead fish. With No. 4 the living specimens can be taken up without damage. The last piece of apparatus is necessary when the water plants require thinning.

Also, purchase a piece of quarter-inch vulcanised India-rubber tubing, three feet six inches in length, to serve as a moveable syphon.

MICROSCOPIC VIVARIUM.

A narrow glass shade, similar to those used to cover ormolu clocks, is cemented upside down on a wooden stand. Against this the microscope is placed, the thinness of the glass allowing the use of a half-inch object lens.

With this apparatus, a good instrument introduces us to a world of wonders. But those who possess no microscope, need not despair of amusement. There is a field for life-long research and interesting study in that which can be seen by the unassisted, but observing eye. And, should the aquarian possess the glass of faith, he has a still better prospect in view, for "Eye hath not seen, nor ear heard, neither hath entered into the heart of man to conceive, the things which God hath prepared for them that love Him."—E. A. COPLAND.

[This has the deeply additional interest of being the last written thought of our departed correspondent.—ED.]

PEAR MILDEW.

A Note by the Rev. M. J. BERKLEY.

MANY varieties of Pear were affected, in the autumn of 1852, with a black mildew, which is extremely injurious to their beauty, and, consequently, to their market value. In the Garden of the Horticultural Society, the *Glout Morceau* and *Easter Beurré* were more especially affected, but the disease is not confined to these varieties; in my own district, I have noticed it more particularly on the *St. Germain*. The disease attacking the fruit is, in point of fact, the same which has of late been observed so frequently, both in this country and on the Continent, on the leaves and young shoots of Pears, and of which some account was given in the *Gardener's Chronicle* of June 17, 1845, as also of a similar disease on the leaves of *Crataegus Pyracantha*, October 28, of the same year. The fungus, like many others, takes its origin beneath the real cuticle, through which it soon makes its way, and then appears perfectly superficial. In some cases, as in the leaves of the *Common Service*, and on Apple leaves, the mycelium exhibits a beautifully radiated spot, and, in consequence, it has been named by Persoon *Actinonema*. The shape of the spores is, within certain limits, pretty constant, whether it grows on the Pear or Apple; while those of the plant on *Pyracantha* are of a totally different form, and smaller. As the patches, when they occur on fruit, especially on Apples, are more neatly defined than when they grow on leaves, and the remains of the white cuticle are very manifest surrounding the smutty spores, they have given rise to a distinct genus (*Spilocæa*), in accordance with that superabundance of useless divisions with which Mycology, more, perhaps, than any other branch of Botany, abounds. Such productions, though far from uncommon amongst Pears, are far more abundant on Apples, insomuch that the produce of whole orchards is frequently almost valueless. The disease sometimes commences in a very aggravated form when the fruit is no larger than a Pea, rendering the whole crop abortive. Such was the case in 1852, in one garden, with a young and apparently healthy *Downton Nonpareil*. The *Newtown Pippins*, which are transmitted to the southern

states, are often disfigured by it, and though, perhaps, those which are exported to this country are more carefully selected, they are by no means free. The species, however, by which they are affected is not always the same. At least, *Spilocæa fructigena*, Schwein, of which I have authentic specimens, is not the same species with that before me.

As regards any remedial measures, I have little or nothing to offer. Such affections are often dependent on causes over which we have no control whatever, and are part of the curse which aggravates all human labour. The best cultivation will sometimes fail, where atmospheric agency is principally concerned; and in the present case, where everything has been done to secure a proper condition of soil, and a due exposure of the leaves to light and air, immense injury has been produced year after year with every variety of season and treatment.—(*Horticultural Society's Journal*.)

BARLEY COFFEE.

HAVING seen accounts of coffee from roasted barley being used on the Continent—and its usefulness being confirmed by friends who had tried it in cases of illness—I forward the enclosed paragraph for insertion, if it meets with approval. It is taken from a lately published tour in Italy, by Mrs. Westropp. Her remarks are as follows:—

"Tea and coffee are prohibited by my Italian doctor, but I have a very good substitute for the latter, in *café d'orzo*. This is made of barley, which is roasted and ground, and then boiled like regular coffee, and really has a very nice flavour when roasted properly. It is said to be very nutritious, and does not possess the heating and exciting properties of the foreign berry; the price also is very moderate,—fivepence for the pound of twelve ounces."

Two cases have occurred to our own knowledge, where health was apparently restored to children, from its use, in cases of great weakness, where it seemed to occur to the medical men as an experiment worth trying.

It is easy to roast the barley: if it is spread on a dripper, cover the bottom half an inch deep, and not more. It needs stirring to turn it about every five minutes, and will be enough done in half an hour. A common, or American, oven does best for it. The colour will be a *very light* brown when roasted, not nearly so dark as coffee; but when boiled, the colour is almost, if not quite, as dark, and the flavour, as Mrs. Westropp states, is really nice, and is so considered by all we know, who have tried it. If this grain could be roasted by the regular dealers in coffee, it would, we think, be a gift to the working classes, many of whom live on coffee almost entirely, and suffer in health from doing so.—P.

MANAGEMENT OF STEWARTON AND OTHER SLIDE HIVES—THE LATE MR. R. EAGLESHAM.

SOME short time since, a correspondent mentioned that he had found some difficulty in moving the slides of his Stewarton hive; and, as the same difficulty may occur to the possessors of my bar and slide hive, I am induced to mention the very simple means by which the slides of both hives may be loosened. All that is requisite is, to insert the point of a screw-driver, or any other blunt wedge-shaped instrument, between the slide and the bar, and push it along the whole extent of the slide; then to repeat the operation on the other side of the slide. By this simple means the propolis, cementing the slides, is broken, and they are then readily removed.

The bee-season has again been a glorious one. I have, within a few hours, removed a top box, containing 25 lbs. of honey, from my *worst* Stewarton hive at Muswell Hill, and left more than 30 lbs., in the lower boxes, for the winter's store. To-day (July 2) we have had a honey-dew, that has literally run off the leaves of the Limes and Syeamores, dripping on the shrubs below. The bees have, as usual under such circumstances, laboured incessantly; and, on every tree producing the honey-dew, the green aphid has swarmed in thousands on the under side of the leaves.

I cannot conclude this letter, which contains an allusion to the Stewarton lives, without paying a tribute of respect to the memory of Mr. R. Eaglesham, who first introduced them to the readers of THE COTTAGE GARDENER. During the last two years I have frequently had occasion to correspond with him on various topics, and can truly say, that his extreme honesty in matters of business, his liberality in imparting information, his manly fortitude in bearing misfortunes, brought on by the American crisis, and his patient endurance of illness, quite won my esteem; and it gives me unfeigned, though regretful, pleasure, to hear from other quarters, that the high opinion I had formed of his moral worth was not overcharged, and that he was during life deservedly respected, and is after death no less generally regretted. The readers of THE COTTAGE GARDENER must regret the loss of a correspondent whose letters were always sensible, full of valuable information, and whose only fault was their unfrequency.

"Only the actions of the just,
Smell sweet and blossom in the dust."

—W. B. TEGETMEIER, *Muswell Hill*.

HARDY PLANTS, BLOOMING OUT OF DOORS IN JUNE, IN THE ROYAL GARDENS, KEW.

RANUNCULACEÆ.—*Delphinium Chinense*, *D. lasiostachya*, *D. exaltatum*, *D. intermedium*, *D. ranunculifolium*, *D. hybridum*, *D. grandiflorum*, *D. azureum*, *D. discolor*, *D. laxiflorum*, *D. cœruleseens*, *D. mesoleucum*, *D. flexuosum*, *D. albiflorum*, *D. elatum*, *D. revolutum*, *D. amœnum*, *D. Clusianum*, *D. villosum*, *D. splendidum*, *D. glabellum*, *D. palmatifidum*, *D. mosehatum*; *Clematis hybrida*, *C. angustifolia*, *C. integrifolia*, *C. Viorna*, *C. diversifolia*, *C. Pallasii*, *C. erecta*, *C. erecta nana*, *C. lathyriifolia*; *Thalictrum affine*, *T. dasycarpum*, *T. coneinum*, *T. elatum*, *T. flavum*, *T. glaucum*, *T. minus*, *T. minus acutilobum*, *T. minus pubescens*, *T. Jacquini*; *Pulsatilla alpina*; *Anemone narcissiflora*, *A. Hudsoniana*.

PAPAVERACEÆ.—*Eschscholtzia tenuifolia*, *E. crocea*, *E. Californica*; *Iberis amara*, *I. carnosa*, *I. umbellata*; *Moricondia Ramburii*, *M. arvensis*; *Matthiola annua*, *M. tristis*; *Cheiranthus longifolius*; *Erysimum Peroffskianum*.

RESEDACEÆ.—*Reseda odorata*, *R. lutea*, *R. luteola*.

CISTACEÆ.—*Cistus ladaniferus*.

CARYOPHYLLACEÆ.—*Dianthus campestris*, *D. Caucasicus*.

LINACEÆ.—*Linum grandiflorum*, *L. maritimum*, *L. juniperifolium*, *L. Austriacum*.

TROPEOLACEÆ.—*Tropæolum majus*, *T. minus*.

RUTACEÆ.—*Ruta graveolens*, *R. divaricata*; *Peganum Harmala*.

LEGUMINOSÆ.—*Genista auxantia*; *Lupinus Ehrenbergii*, *L. Menziesii*, *L. leucophyllus*, *L. Dumetii*, *L. Dumetii superbus*, *L. Hartwegii*, *L. sneeulentus*, *L. nanus*; *Galega officinalis*, *G. biloba*; *Sophora lutescens*; *Melilotus gracilis*; *Lathyrus latifolius*, *L. latifolius albus*, *L. venosus*, *L. odoratus*, *L. sylvestris*, *L. articulatus*; *Ononis arvensis*, *O. repens*, *O. Natrix*, *O. rotundifolia*, *O. hireina*; *Vicia pisiformis*.

ROSACEÆ.—*Sanguisorba dodecandra*, *S. angustifolia*, *S. earnea*, *S. tenuifolia*, *S. leucantha*; *Agrimonia pilosa*; *Gilena trifoliata*; *Spiraea Ulmaria*; *Geum japonicum*; *Potentilla Morisonii*, *P. Menziesii*, *P. argentea*, *P. pulcherrima*, *P. Garneriana*, *P. hamatochrus*, *P. Plantii*, *P. leucochroa*, *P. splendens*, *P. Taurica*, *P. fragiformis*, *P. hirta*, *P. Thomasii*, *P. recta*, *P. ornithopoda*, *P. Iberica*, *P. colorata*, *P. Dethomasii*, *P. Mackayii*.

ONAGRACEÆ.—*Godetia lepida*, *G. tenella*, *G. purpurea*, *G. Romanzovii*, *G. quinquevulnera*, *G. insignis*; *Eucharidium eoncinnum*, *E. grandiflorum*; *Circæa alpina*; *Oenothera tetraptera*, *O. glauca*, *O. serotina*, *O. macrocarpa*, *O. riparia*, *O. Fraserii*, *O. rosea*, *O. Kunthiana*, *O. prostrata*, *O. Drummondii*, *O. speciosa*, *O. taraxacifolia*.

LYTHRARIÆ.—*Lythrum Salicaria*, *L. virgatum*, *L. verticillatum*; *Cuphea ignea*, *C. strigosa*.

CRASSULACEÆ.—*Sedum cristatum*, *S. rubrum*, *S. Anglieum*, *S. spurium*, *S. micranthum*, *S. Kamschatienum*, *S. album*, *S. album turgidum*, *S. erueiatum*, *S. sexifidum*.

UMBELLIFERÆ.—*Astrantia carnialica*, *A. major*, *A. major*

Biebersteinii; *Eryngium maritimum*, *E. Billardieri*, *E. amethystina*, *E. erectum*; *Ferula nodiflorum*.

VALERIANACEÆ.—*Valeriana alliarifolia*.

DIPSACEÆ.—*Cephalaria tatarica*; *Dipsacus Fullonum*; *Trichera ciliata*; *Pterocephalus Palestinus*; *Scabiosa Caucasicæ*, *S. graminifolia*; *Knautia orientalis*.

COMPOSITEÆ.—*Achillea aurea*, *A. tomentosa*, *A. ageratum*, *A. ligusticum*, *A. millefolium*, *A. millefolium roseum*, *A. abrotanifolium*; *Pyrethrum balsamita*, *P. roseum*, *P. Parthenium*, *P. Parthenium pleno*; *Santolina rosmarinifolia*, *S. Chamæ-Cyparissus*, *S. viridis*, *S. pectinata*; *Anthemis tinctoria*, *A. altissima*, *A. Austriaca*; *Catananche cœrulea*; *Helminthia echioides*; *Kaulfussia amelloides*; *Gaillardia bicolor*, *G. aristata*, *G. rustica*; *Helianthus canescens*; *Coreopsis lanceolata*; *Vittadenia trilobata*; *Erigeron Roylii*; *E. grandiflorus*, *E. Philadelphicus*, *E. glabellus*, *E. elongatus*, *E. glaucus*; *Calandula arvensis*; *Podolepis gracilis*; *Rhodanthe Manglesii*; *Aeroclinium roseum*; *Centaurea macrocephala*, *C. cyanea*, *C. cyanea rosea*, *C. Tagana*, *C. dealbata*, *C. caloecephala*, *C. muricata*; *Parmica stricta*, *C. alpina*.

LOBELIACEÆ.—*Clintonia elegans*, *C. pulchella*; *Lobelia campanulata*, *L. Erinus*.

CAMPANULACEÆ.—*Campanula urticæfolia*, *C. Trachelium*, *C. Loefflingii*, *C. liliflora*, *C. persicifolia*, *C. persicifolia alba*, *C. rapunculoides*, *C. Rapunculus*; *Phyteuma campanuloides*, *P. stricta*; *Jasione montana*, *J. perenne*; *Wahlenbergia lobelioides*; *Platycodon grandiflora*.

APOCYNACEÆ.—*Apocynum cannabinum*, *A. hypericifolium*.

ASCLEPIADACEÆ.—*Aselepias Syriaca*; *Vincetoxicum officinale*; *Periploca Græca*.

GENTIANACEÆ.—*Gentiana cruciata*, *G. gelida*.

POLEMONIACEÆ.—*Gilia capitata*, *G. tricolor*, *G. multicaulis*, *G. millefoliata*, *G. tenuifolia*; *Leptosiphon luteus*, *L. luteus aureus*, *L. parviflorus*, *L. androsæus*.

CONVOLVULACEÆ.—*Convolvulus althæoides*, *C. Cneorum*, *C. tricolor*, *C. tricolor alba*.

NOLANACEÆ.—*Nolana paradoxa*, *N. atriplicifolia*.

BORAGINACEÆ.—*Echium violaceum*, *E. vulgare*, *E. Italicum*, *E. pyramidale*; *Cerinthe retorta*, *C. gymnandra*, *C. major*; *Omphalodes linifolius*.

HYDROPHYLLACEÆ.—*Eutoca Wrangeliana*, *E. multiflora*, *E. viscida*; *Whitlavia grandiflora*.

SOLANACEÆ.—*Verbascum Thapsus*, *V. Phœniceum*, *V. Caucasicum*, *V. orientale*, *V. vernale*, *V. Lagurus*, *V. virgatum*, *V. glabrum*, *V. rotundifolium*; *Nicandra physaloides*; *Physalis Alkekengii*.

SCROPHULARIACEÆ.—*Calceolaria scabiosæfolia*; *Linaria multicaulis*, *L. macroura*, *L. supina*, *L. Salzmannii*, *L. saxatilis*, *L. alpinum*; *Collinsia bicolor*, *C. multicolor*, *C. bartsiaefolia*, *C. grandiflora*; *Mimulus guttatus*, *M. cardinalis*; *Gratiola officinalis*; *Digitalis grandiflora*, *D. Lindleyana*, *D. ambigua*; *Pentstemon diffusum*, *P. pubescens*, *P. roseum*, *P. perfoliatum*, *P. lævigatum*, *P. elegans*, *P. campanulatum*, *P. agreste*, *P. Hartwegii*; *Veronica maritima*, *V. grandis*, *V. orientalis*, *V. paniculata*, *V. alpina*, *V. media*, *V. longifolia*, *V. spicata*, *V. Sibirica*, *V. hybrida*, *V. villosa*.

LABIATÆ.—*Salvia Habliziana*, *S. napifolia*, *S. garganica*, *S. pratensis*, *S. verbasifolia*, *S. nutans*, *S. pendula*, *S. Horminum*, *S. Forskohlii*, *S. porphyrata*, *S. Tenorii*, *S. verticillata*; *Phlomis pungens*, *P. Russeliana*, *P. tuberosus*, *P. Samia*, *P. fruticosa*, *P. agraria*; *Stachys menthaefolia*, *S. mollissima*, *S. Bridgesii*, *S. ambigua*, *S. alpina*; *Origanum vulgare*; *Scutellaria hastæfolia*, *S. galericulata*; *Melissa alpina*, *M. pata-vica*; *Betonica hirsuta*, *B. grandiflora*, *B. orientalis*.

PRESERVING SEA-WEEDS.—There is little difficulty in getting the plants to adhere to the paper, as most of the algæ are furnished with a gelatinous substance, which acts like glue, and fixes them firmly down. Where they do not readily adhere, the use of hot water will generally compel them to do so; and if they still remain obstinate, the gelatine obtained by boiling the carrageen (*Chondrus crispus*) will be an unfailing remedy. This is a much better cement than animal glue, or even gum-water, as it approaches nearer to the natural glue of the plant. *Furcellaria fastigiata*, *Cladophora arcta*, and others, are not easily affixed to the paper, and will often require the aid of some adventitious substance.—(*The Common Objects of the Sea-shore*, by the Rev. J. G. Wood.)

QUERIES AND ANSWERS.

HEATING A SMALL GREENHOUSE.

"I am erecting a house 25 feet long, 7 feet wide, $6\frac{1}{2}$ feet back, and $3\frac{1}{2}$ feet front wall, to be divided into two lengths of about 10 feet and 15 feet. I intend to heat a bed in the former, to propagate bedding or other plants; whilst the larger division will be used as a cool-house for stowing Geraniums, Fuchsias, &c., but with sufficient pipes to keep out frost in the winter-time. Will you have the goodness to inform me, what quantity of pipe will be requisite to obtain 70° to 80° of heat in the smaller house, and whether I ought to have pipes for top as well as for bottom heat? whether the pipes would do, as arranged in accompanying sketch, or whether a tank would be preferable to a pipe under the propagating bed?"—RD. DEWING.

[Your house, or pit, has a close resemblance to one described by Mr. Fish, for Cucumber and Melon growing, and also, more lately, for early Grape growing.

1. The two four-inch pipes will be sufficient to keep frost out of the cool department.

2. It will require double that quantity,—namely, forty feet,—to keep the smaller department up to 70° or 80° in cold weather, in winter or early spring.

3. It matters not whether two of these pipes are placed for top heat, and two for bottom heat, or all are placed beneath your bed; but, in the latter case, you must have openings for the heated air to get into the atmosphere of the house.

4. Pipes are just as good as a tank under your propagating bed,—in your case, better,—as the water would go on better in the cool house when wanted. You could get moist vapour from your tank, by having openings; you may do the same from pipes, by placing water about them.

5. Your slate covering would do well enough; but then you would want a bed of sand, or tan, over the slate, in which to plunge your cutting pots. Why not form a concrete bed below your beds, surround them, and cover them with brick-bats and clinkers, so as to make a rough, open chamber? Cover with clean gravel, and then sand or tan. The slate would require to be a foot from the pipes.

6. A small flue would do for such a place, but not so well as hot water. The flue would require to be perfect in the first division, and the heat let in to the cool division only when necessary. If this is not sufficient, write again.]

BROMPTON AND QUEEN STOCKS.

"Is it the *Brompton* or the *Queen* biennial Stock, whose flower is produced on a single stem? I ask the question, because I find it stated, on the high authority of Mr. T. Appleby, Vol. XII., page 196, of THE COTTAGE GARDENER, that the *Brompton* generally produces only single flower-stems, and hence its botanical specific name of *simplicicaulis* (simple stemmed). Whereas, in Vol. XV., page 152, of the same work, I find it asserted as boldly, that the *Queen* Stock is distinguished from the *Brompton* by its (the *Queen's*) flowers being produced on a single stem: hence its botanical name of *Mathiola simplicicaulis* (single stemmed)!"

"In answering this, you will, perhaps, be kind enough concisely to state what the difference really is between *Brompton*, *Queen*, and *Giant* biennial Stocks.

"Mr. T. Appleby, at the same page, made the following (to me) very interesting statement:—'I saw, a few days ago, in a cottage garden, of very humble pretensions, a fine example of this single-stemmed Stock. It was the scarlet variety, and was growing in a very narrow border, close to the wall, under the window. It was two feet and a half high; the spike of flowers measured fourteen inches, thickly set with blooms, each almost as large as a *Provence* Rose, and quite perfect from the bottom of the spike to the top. The colour was also perfect,—not the least trace of variegation being visible. I understood it came up from self-sown seed, and had never been disturbed.'

"This exactly answers the description of a noble kind of scarlet Stock, which used to be common in the gardens of our glass-makers and pitmen; it being then popularly known as

the *Giant* Stock, and was a great favourite. It seems to have vanished altogether from this locality; and, as I am now desirous of procuring its re-appearance, I would feel thankful if you, or any of your correspondents, would inform me, through the medium of your columns, where, and from whom, I can obtain genuine seed for the production of such a kind of Stock as was seen, and so well described, by Mr. Appleby."—T. S., *South Shields*.

[In Messrs. Carter and Co.'s catalogue, for this year (a high authority), the *Brompton* Stock is named *Mathiola simplicicaulis* (simple stemmed); a native of England; a hardy biennial, growing three feet high. The *Queen* Stock is named in the same work as *Mathiola incana* (hoary leaved); also a native of England; a hardy biennial, growing one foot and a half high. There is also a hybrid kind, which the same catalogue names *imperialis*; a hardy biennial, growing one foot and a half high. Of the two first there are three varieties,—namely, purple, scarlet, and white. Of the last, there are also three varieties,—described as purple, rosy carmine, and white. The *Giant* Stock is the *Brompton*. Our correspondent may obtain the seeds from that establishment, no doubt quite true. This explanation, we trust, will satisfy our correspondent, and set the question at rest as to the difference between the biennial stocks; and we hope the mechanics he speaks of will soon obtain the *Giant* Stocks, and cultivate them as well as they ever did.

It is almost too late now to sow the seeds; but plants may be obtained from any respectable nursery, or from the stalls in Covent Garden: such plants will bloom next year. The seeds may still be ordered, and kept to sow next year. I have always found one-year-old seeds produce more double flowers than new seeds. This is a fact; though I cannot say why there is a larger number of double flowers in old seeds than in new ones. The seeds should be sown early in June, and transplanted to where they are to bloom in August. The soil should not be too rich, or the plants will grow so gross, and the stems be so full of sap, that the frost will be almost certain to kill them. Soil abounding in calcareous matter—in other words, limestone—is the best for biennial Stocks. In it they become more woody in the stem, and are less subject to variegated flowers.

It would be a good plan to place some hoops over the bed of biennial Stocks; and, in severe weather, to cover them with oiled canvass; not only to keep out the severe frost, but also to protect them from heavy snows and rains. There must be no transplanting in spring, for, by so doing, the blooms will be poor in spike and colour.—T. A.]

CAUTION TO ADVERTISERS IN "THE COTTAGE GARDENER."

I AGAIN beg to caution advertisers in THE COTTAGE GARDENER, against a set of swindlers at Manchester, who write for articles, promising a remittance by return of post, which remittance, I need not say, the victim never receives. The applications are written in the most illiterate style, on engraved billheads. My advice to those persons, who receive orders from these worthies, is to pack up a few bricks, or a dead cat, in an old box or hamper, and leave them to pay the carriage.—X. Y. Z.

[Who is "G. Clements, merchant, Manchester?" Let advertisers inquire.]

ORIGIN OF SWARMING.

When we deal with any subject, about which there is no evidence which would lead to a definite or right conclusion, all we can do is to indulge in theory, and all such theorists are fully entitled to claim, for their particular theory, as much credit as those who indulge in an opposite opinion; unless, indeed, it should be drawn from something monstrously fallacious. Acting under this impression, I indulged myself by theorising upon swarming, in the seventeenth volume of THE COTTAGE GARDENER, page 80.

I gave it as my opinion, that the idea of swarming did not originate with the queen. I knew I was here treading on

dangerous ground, being contrary to the received opinion of by far the greater part of the bee-keeping intelligence of Great Britain. Yet I made the venture, because I imagined that my reasons for so thinking were at least not absurd.

I was not surprised, therefore, when Mr. Wighton took exception to my theory; but I am bound to confess that my stiffnecked and stubborn mind did not yield to his argument. And so the matter stood, until the 18th of the past month of June. In one of my hives, directly opposite the lower part of the window, a royal cell was built and tenanted, and on the 13th sealed up. The three following days were superb days for swarming. On the 17th it rained incessantly, from morn till eve. The 18th was warm and mild, a very ideal swarming day. I watched the hive closely from eight o'clock till noon, when, shortly after, it was evident something was about to occur, and a complete uproar began.

The bees, like soldiers in a captured town given up to pillage, attacked the cellars' stores; then raced and chased in whirling groups, like mad things, upon the window. Outside the hive, the creatures filled the air with their noise and presence, as portentous of a coming swarm as anything I ever saw. At length her majesty mingled with the throng careering on the window; her slow and stately gait and majestic bearing all gone, and as wild and reckless as any of her offspring rotating about her. And what becomes of thee, my princess, wrapped in thy swaddling bands, should thy insensate mother find thy cradle out? No sooner did I thus soliloquize than it fell out as feared. Spying the royal crib, she rushed at it with impetuous fury, but was driven back. Three times she acted thus, and three times was driven back by the guardian bees: the fourth time, she accomplished her bloodthirsty object by making a breach in the side of the cell. As quick as thought, after she had made the opening large enough, by gnawing and tearing furiously at it, she brought the lower extremity of her abdomen over it, then passed from my—shall I say enraged or admiring—gaze, for in truth I experienced both sensations.

I conclude from the above facts—First, not only that the idea of swarming does not originate with the queen, but that it is, even in an extraordinary degree, repugnant to her; for what else can we say, when we find her sacrificing her maternal feelings, and choosing rather to become the murderess of her royal infant, than leave the city she has ruled so long and well. Secondly. Had the guardians of the cell been successful in saving its occupant, she, finding her intentions frustrated, would, in high huff and displeasure, have left the hive. Thirdly. That the bees, in gorging themselves with honey, prior to the royal onslaught, showed that the idea of swarming was not foreign to them. And fourthly. That the pains they took to save the young princess appears to sanction the notion, that they wished the queen to leave or abdicate in her favour.

I would wish, before closing this paper, to submit, with all respect, for Mr. Wighton's consideration, whether or not the mere fact of a few pollen-laden bees mixing with the swarm, is not too narrow a basis on which to rest his belief, that the time of swarming is a matter of uncertainty with the bees generally. This mode of reasoning appears to me to be unsound, inasmuch as it makes the exception govern the rule. I am rather disposed to think, from the simple fact alone that the bees composing the swarm fill their crops prior to leaving, the time is not so great an uncertainty, provided the weather is suitable.—D. G. M'LELLAN.

POMOLOGICAL SOCIETY'S MEETING.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held at St. Martin's Hall, Long Acre, on Thursday, the 8th inst., ROBERT HOGG, Esq., Vice-President, in the chair.

Mr. C. EDMONDS, gardener to the Duke of Devonshire, Chiswick, was elected a Member of the Society.

Mr. HENRY DOUBLEDAY, of Epping, sent a dish of a Seedling Strawberry, which was raised, some years ago, by Mr. Myatt, of Deptford, and given by him to Mr. Doubleday. This variety is entirely different from the usual strain of Mr. Myatt's seedlings, and belongs more to the Keens' breed. The fruit is very

large, generally flattened, and more or less cockscomb-shaped, but sometimes thick wedge-shaped. The colour is dark red; seeds small, and thinly strewn. The flesh is red, rather tender, and hollow at the core; but the flavour is excellent. Mr. Doubleday stated that he considered it a first-rate kind, and stands the dry weather better than any other variety. The fruit was from plants two years old, which have had no manure since they were planted, and which have been only once watered this year. The flavour is evanescent, and Mr. Doubleday says, it is therefore impossible to judge of it when the fruit has been picked the day before; but when fresh, he considers it excellent, and the most juicy kind he knows.

Mr. HILL, of Keele Hall, Staffordshire, sent specimens of the *Adair Strawberry*,—a large and handsome fruit, very similar in external appearance to Mr. Doubleday's variety. Its flavour, however, is not so fine and delicate, being rather too acid; but this is an objection that may be overcome in some situations and seasons; for it is to be borne in mind, that the last fortnight has not been at all favourable for the ripening of fruits that are charged with a more than ordinary amount of acid. Mr. Hill also sent a dish of *Filbert Pine*,—a nice, hard, solid-looking fruit, of a conical shape, but rather pale colour, and thickly set with rather large seeds. The flesh is white, remarkably solid and firm, with a rich, and at the same time, brisk and refreshing piquancy. This must be a rare Strawberry to bear carriage, but its colour is against it as a market fruit.

Mr. JAMES SHEPPARD, nurseryman, Bedford, sent a quantity of his *Seedling Cherry*, which was submitted at the first July Meeting, last year. It has all the appearance of the Black Circassian, and is as large as that variety is when grown on a standard. It is quite equal to it in flavour, is of the same colour, and, if it be hardy and a greater bearer than Black Circassian, the Meeting was of opinion it would be a valuable acquisition; but if it has no such distinguishing merit, then they do not see that it differs at all, or is any improvement on that variety.

C. GUTHRIE, Esq., of Tay Bank, Dundee, forwarded specimens of a *Seedling Cherry*, raised from the *Elton*. This is a large and handsome fruit, equal in size to the largest Bigarreau, and has rather more colour than the Bigarreau generally has. The flavour, though good, is not so rich as that of the Elton grown in the south; and to have done justice in the judgment of this handsome fruit, it was necessary to have had specimens of both varieties, as grown in the same situation and latitude.

Mr. PEARSON, of Chilwell, near Nottingham, sent fruit of a Cherry, inquiring whether it was the true Black Circassian; and this being decided in the affirmative, it gave rise to a conversation as to the difference between the Black Circassian and Black Tartarian, the general opinion being that the two are identical. On reference being made to Covent Garden Market, it was discovered that there are two distinct varieties with these names sold in the market. The Black Circassian is obtuse, or very bluntly ovate, and very wide at the stalk end; while the Black Tartarian is much more slender and tapering in its shape, and, altogether, a degree smaller in size. We should be very glad if our readers would favour us with their ideas on this subject, and send us specimens of the two varieties where they find they are distinct.

DIBBLED WHEAT.—We have received from Mr. Powell, of Hurst Green, an ear of Wheat, in bloom, measuring six inches in length. The crop is grown on the principle recommended by "SIGMA," and the seed was planted by one of Dr. Newington's dibbers.

A HINT TO POTTERY MANUFACTURERS.

IN one of your late numbers, in describing a private garden in France, you mentioned and spoke highly of an edging made of white china, in rows of semi-circular pieces. In fact, it must have a most beautiful effect, combined with beds of Geraniums, Calceolarias, and verdure. China is of no use unless you mean delf,—the material of common plates or blue-ware. That material is used on the Continent for room-stoves, and keeps its brightness and colour for countless years; it may be washed, or is washed by the rain, and is always white as new. It is very cheap. The use of brick-coloured earthen edgings is very extensive now in all new gardens, and they are pretty when new; but delf-edgings are incomparably prettier, and every garden would soon be provided with them. Most Box-edgings are disfigured by dead plants, and are a receptacle for snails; Box must be replanted every eight years, or it grows too large, and takes away the best of the mould; it is dear, and requires constant care and expense. But delf, once laid, costs nothing; it might be light blue, or mixed white and blue, or otherwise ornamental; anyone can remove and replace it in case of alterations, and even lay it down, whilst Box requires a skilful gardener, or the plants die. So it does under trees. The walks are kept in better order with earthen edgings. White has the property of enhancing the colours of green, red, and yellow, as mentioned in your article on colours, and a garden so contrived would be pretty even in winter, and the smartest thing during the other seasons.

P.S.—When ready, it must be advertised in THE COTTAGE GARDENER, that anyone can procure it.—A FRENCHMAN.

IMPROVED FOXGLOVES.

HAVING seen, in THE COTTAGE GARDENER, a notice of a sport in a white Foxglove, I enclose you a similar one from one of mine. I also enclose you several other varieties, raised by myself, which we all think beautiful. As this noble plant seems, with me, to sport into almost innumerable varieties, ought it not to be elevated to the rank of a florist's flower? I doubt not its erect-growing capabilities, with many other good properties, by a little care in the collection of the best seed.

It is a most accommodating plant, and destined to adorn many an old dry fence, where nothing else will flourish.

This beautiful British plant will deceive nobody; no coddling or nursing is necessary; no disappointment ensues. Every season I enlarge the spots, till they have become blotches; and there is no knowing where their beautiful markings may end. Some are also delicately shaded, both inside and outside, with all the shades of purple, rose, and lilac. I am saving seed from twenty distinct varieties this season, but particularly from the monster.—W. E.

[Your Foxgloves are indeed most lovingly marked: the purple, the white, the monster, and several lilac degrees, are dotted, eyed, and painted inside most beautifully, and they deserve all you say about them and something more. You are the right man in the right place. Go on and prosper.]

ON COTTAGERS' PLANS WITH BEES.

I FIND that "B. and W." takes my remarks on his first paper on bees, at page 10, in the true light: and I beg to say that I heartily agree with him that more stocks might be kept; but, except in Heath districts, not to the extent of "every cottager keeping ten stocks over winter," on whatever plan they are kept.

My remarks on old bees "might have been spared." True. But, perhaps, they may be the means of "B. and W." modifying his expression, "after getting rid of the old bees;" for this might lead some to think that the bees in new hives were old and useless, whereas some of them are nearly of the same age as part of the brood of which he was speaking.

My objections to inverting hives are not new; for I mentioned some of them in a discussion, in Mr. Loudon's "Quarterly Magazine," with the Rev. — Clark, who took an interest in Mr. Nutt's book. I said it was contrary to the

habits of bees in the construction of their cells: when these were inverted, the unsealed honey dropped out. This, however, would hardly apply to the point in question. But why not place the "plundered hives," under the old stocks, in their right position. The wrong one does not place the larvæ a whit nearer the bees above, besides the risk of injury by their altered position. I need not dwell more on this point, but may note that "B. and W." says, "that the larvæ would soon change their position in search of food" (where?). But, as they are firmly fixed in their cells, is it possible for them to turn round to be fed by the bees? I may further observe, that I never found perfect specimens of insects bred from the chrysalis, if it had not been kept in the same position in which I found it.

I think that "B. and W." passed too lightly over what I said concerning the side-combs, and the edges of the brood ones containing honey-cells. But, be that as it may, I have only two more things to notice,—the time to plunder the hives, and preventing increase of swarms.

My remarks were made on "B. and W.'s" first paper, already noticed, in which the time is not stated when cottagers are to destroy their bees. In the next one, however, the end of July is named; also the 1st of August, at page 135, amongst his remarks on my previous paper. But I may safely say, that bee-keepers know better, especially in Heath districts, than to take up their hives before the end of the honey harvest, which sometimes lasts to the middle of September, in northern parts of the country.

I need hardly observe, that though heat and want of room cause bees to swarm, especially the first ones, still they are not the chief cause; consequently "B. and W.'s" plan, to prevent second ones, does not accord with the laws of swarming. But having spoken so lately on this subject, under the head of second swarms, at page 164, I trust these few hints will be satisfactory. I may add, that on the 31st of May it was 82° of heat, in a northern aspect; and to-day, the 16th of June, it was 90° at one o'clock, in the same place. During such great heat, beekeepers should shade their hives, in order to prevent the combs collapsing.—J. WIGHTON.

TO CORRESPONDENTS.

ROSE-BUDS NOT OPENING (*A Constant Subscriber*).—There is nothing to be seen in the Rose-buds, to indicate the cause of this kind of Rose not opening as freely as others under the same circumstances; but we take the cause to be, that it is one of a vast number of imported Roses, for which our English or British climate is not suited. As it seems to be a very good Rose, we think the best thing you can do with it is, to try it in a pot as you propose, and give it an orchard-house treatment, by saving it from extreme cold, and by a gentle impulse in the spring, and if it proves to be worthy of that care, to continue it. Prepare it thus for the change:—In the last week in September, or the first week in October, prune it down as close as you would do at Christmas, and leave it where it is till some fine day in November; then take it up carefully, and prune all its roots, just as close as the head was pruned. Pot it in rich light soil, the first year, and after that in strong rich loam.

CUCUMBER PLANTS (*A Subscriber*).—The specimen was too much crushed to form an opinion even of what was the ailment. Cucumbers are too liable to injury, for us at any time to say whether it was occasioned by faulty treatment.

GERANIUM LEAF (*J. H. Smith*).—Your Geranium has indeed a *Cloth of Gold* leaf. If the habit will be permanent, it will be a valuable trade plant, and an invaluable flower garden plant. The largest leaf, and the best marked leaf of the *Golden Chain*, will give a good idea of your prize; add the habit and flower of *Tom Thumb*, and the character is so far complete, as far as can be judged from cut leaves. But you had better send a plant to Mr. Beaton, to be proved. It will be as safe with him as with yourself.

CATERPILLARS ON TURNIPS (*R. D. G.*).—The black Caterpillars on your Turnips are the "niggers," or larvæ of the Sawfly, *Athalia centifolia*. Employ children to pick them off, or drive a lot of young ducks into your field.

NAME OF ROSE (*D. M. C., Wrexham*).—There are fifteen or twenty kinds of Roses, with similar purple-shaded flowers. Without knowing to which class your flowers belong, no one could make out the kind from two flowers which had fallen to pieces.

NAMES OF PLANTS (*J. Nicholson*).—Your Fern is *Asplenium adiantum-nigrum*. (*W. G.*).—No. 1. *Watsonia marginata*, which has the leaves more narrow, longer, and more pointed than its nearest kindred, which is your No. 2. *Watsonia rosea*, which has thickened edges, like *marginata*. No. 3. *Ixia*, or, as it son etimes called, *Tritonia longiflora*. No. 4. *Tritonia rosea*. (*Glasgow*).—Your Geranium is *Vesper*. (*A. B. C.*).—The flowers were of a pure and pearly-white kind of *Pelargonium*; but whether it was double, like Jackson's double white, or single, like the rest, we cannot say, as all the petals fell off; but, among them, some very small ones would indicate a double flower.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JULY 16th. YORK. *Sec.*, Mr. R. Smith, cutler, 10, High Ousegate, York. Entries close July 8th.
 AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. *Sec.*, W. Houghton.
 AUGUST 18th. AIREDALE. *Hon. Secs.*, J. Wilkinson and T. Booth, Shipley.
 AUGUST 28th. HALIFAX AND CALDER VALE. *Sec.*, Mr. Wm. Irvine, Holmfield, Halifax. Entries close August 14.
 OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.
 NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.
 DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, Woolshops, Halifax.
 JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.
 N.B.—*Secretaries will oblige us by sending early copies of their lists.*

GATHERINGS ABOUT DORKINGS.

"Oh! Tom, the weather is too hot."
 "Is it? Let us have a row on the Thames."
 "Faugh! I crossed it this morning, and have been sick ever since. Let us go for a stroll."
 "Very well; where shall it be?"
 "To Hampstead."
 "Oh! you everlasting cockney; you have no idea beyond your great metropolis and its suburbs."
 "Granted; it is a fine place. But, if you want to get away, let us ride thirty or forty miles out of town, take our knapsacks, and then pedestrianise."
 "Good. What line will you patronise?"
 "The Brighton."
 "Be it so. We start to-morrow."

Those who held this conversation were both young men, full of health and strength, and both of moderate but independent fortune.

The next morning saw them in a railway carriage, which conveyed them to a station on the Brighton line, where they alighted, and started at a venture across country. There is a rural charm about portions of this county, which is not to be found in many others. An improved system of farming is, doubtless, profitable and beneficial, but it is an enemy to the picturesque. The long stretch of land, without a hedge or a tree, is monotonous and uninteresting, but in this part of Sussex the fields are still divided by good thick hedgerows; the gates are such as, probably, were in use a century since, not swinging open, but lifting out of grooves. In fact, everything afforded to our cockneys the change they sought. They wandered down the shady lanes for some miles, enjoying everything as it presented itself to their notice, and were glad at last to see a clean, comfortable-looking roadside inn,—not a new square stucco railway hotel, but one that still looked rural and old-fashioned. A comfortable table and bench, under a spreading Oak in front of the house, and on the patch of green sward that divided it from the road, invited our dusty travellers to rest; and unstrapping their knapsacks, they threw themselves on the seat, like men who were disposed to prove that exercise had prepared them to enjoy whatever fare the house might afford. Their first question was, whether they could have home-brewed beer, and they received the sad and ever-recurring answer, "As good as home-brewed." Pale ale and bottled stout are excellent substitutes, but when a Londoner gets into the country, he yearns for a draught of that delightful beverage, sweet with the malt, bitter with the hop, bright in colour, clean in the mouth, and which, rendered fit to drink by proper age, instead of scientific process, leaves not a twang behind. Our friends were not disposed to be over nice, and were heartily discussing their bread and cheese and pale ale, when a higgler drove up in his cart.

There are people who, while they admire the delightful writing, the sweet written landscapes, and the sound Christian philosophy of Izaak Walton, are disposed to speak of him with a sneer because he was an angler; and some may, perhaps, smile, when we say that this cart laden with live fowls, touched a sympathetic cord. They were both poultry-fanciers. Now, the truth is, we are not sufficiently indulgent to each other's hobbies. Peter Pindar tried to teach us in his

tale. Sir Joseph could not make his friend warm on Tulips: "he has no soul for beauty," said he of his friend. "Mad as a March hare about trumpery flowers," said his friend of him. But a butterfly passed, "an Emperor, by Jove," and in pursuit he trampled the Tulips to the ground. A French writer has hit the right feeling on the subject happily:—

"Or, puisque chacun a les siens,
 Nous avons tous les autres.
 A votre trésorier, les miens,
 Et je rirai des vôtres."

Fishing and poultry are both humanizing and refreshing pursuits. They are both recreative—they lead to quiet and rural scenery. Many a weary body, many an aching brain, many an over-wrought mind, have left their labours, and, seated in the shade on a bank, watched a hen with her chickens, or the proceedings of a favourite set of fowls, till the whole current of thought has been changed, and a balmy feeling of rest and peace has taken the place of painful lassitude.

The higgler took the bit from his horse's mouth, gave him water, and buckled on the nose-bag.

It need hardly be said, our friends left their repast to look at the fowls, with which the coops were filled. The man was pleased they noticed them, and, like sensible men, finding he knew more than they did, they asked him to sit down with them, and give them some information on the subject.

Without attempting the dialogue, we will give the substance of it.

This man's occupation was to collect poultry for the London market, a work of some importance in the spring. The competition in many parts of Surrey, Sussex, and Kent is immense, and three or four higgles will almost quarrel over a coop of fowls. One of these men will keep two or three horses constantly hard worked in collecting poultry. The attendance is not confined to markets, but he calls at all the farm-houses where they keep fowls, and will bespeak them at a fixed price, weeks before they are fit for the table. It is a common thing during the spring, in London (and it has been the case this year), for good fatted fowls to make from 5s. to 7s. each. These are, of course, choice birds; but those of lower quality will, if young,—that is, birds of the year, always at from twelve to sixteen weeks old,—make large prices. He particularly impressed on our travellers that what he called the run on poultry, had rather lessened the supply than otherwise, during the scarce time of year, because every one, hearing of large prices for exhibition birds, was afraid to sell early chickens lest he or she should sell a future ten-pound note, for a present five shillings.

But the point to which, especially one of our friends, wanted to turn the conversation, was on exhibition birds. He was a breeder and exhibitor of Dorkings, and had been surprised at some decisions he had seen and heard of in these classes. He rightly thought, from a practical man he must learn something; and he also appreciated the opportunity of having plenty of subjects, to enable him to have a *live dissection*. The higgler's mirth was first excited by his saying, that a Judge had told him that *we* generally give the preference to single-combed birds. Indeed, many people doubted the purity of the rose-combed birds, and he then elicited the following reply:—

"That wherever you breed for colour, you must prepare to make some sacrifice of size. Great bulk can only be attained by breeding from the largest birds to be had, especially the hens. That, for this reason, many of the largest birds were the most faulty in colour; for instance, the cocks came with breasts copiously spotted, or splashed, with white, with white sickle feathers, and with cup-combs; while the hens come of every shade and hue. He wished Dorkings to be judged for shape and size, rather than colour."

When asked to describe a Dorking, he said—"He wished a large square frame, great width of shoulder and back, short legs, plain five claws, a fine, intelligent, but not a very small head, deep breast, rather protuberant than otherwise, a straight back, and the flesh laid regularly on all over. He gave the preference to the rose-comb, because he thought them the heavier birds." These points were explained and elucidated by birds taken from the coops, and our travellers left him, not a little edified by their afternoon with a Sussex higgler. They also learned to think lightly of that superficial and nervous

judgment, which, in a general class, trembles before certain colours and certain combs.

ANDALUSIANS.

WE all know what the hens ought to be, but we do not know what the cock's real points are. Most of the cocks in this province are pale-blue ground colour, hackle and saddle inclining to a goldenish grey, in fact, *pencilled*; i.e., the midrib of this mixed colour, and the edges lighter; or *vice versa* they are *Spanish*, I mean mixed, the face whitish, and ear-lobe pendant, and comb long behind. Now, the old blue Minorca has a red face, and a good round, close, Hamburgh ear-lobe—in fact, is defined as a Hamburgh in these points—and the comb round and evenly serrated. I want to know if the face is to be splashed, or *all white*, or red? as it makes all the difference in the comb and ear-lobe. If at all mixed, the comb and ear-lobe change directly, and hackle too; but if the face is to be red, you then get the true and real blue Minorca defined in his points. To my queries I get but one reply—*Spanish all but colour*. This is wrong; for he must be defined. I believe the red face, round, flat ear-lobe, and dark blue, or black, hackle, to be the real Andalusian. An answer will oblige.—W. H.

[The Andalusian cock should be blue; the hackle, saddle, and tail, shaded with very dark brown; the comb and wattles very large, larger than in the Spanish; the face should be red, and if the ear-lobe is the same, so much the better, but it is very seldom met with. In almost every specimen the ear-lobe is white, and the same colour trespasses on the face.]

The Andalusian is a larger bird than the Minorca. It is the fashion to call bad red-faced Spanish Minoreas, but it is an error. The Spanish fowl, as known in England, is totally distinct from the fowl of Spain. The latter is a Minorca, and was known, many years ago in this country, as the "Moorish fowl." It is smaller, rounder, shorter on the legs; has less comb; and the face is a bright red, without the least mixture of white. We have imported them from Spain within the last few years.]

WORCESTER POULTRY SHOW.

PERMIT me to say a few words in reply to the letter of your correspondent, "A GLOUCESTERSHIRE AMATEUR," inserted in THE COTTAGE GARDENER of the 29th ult.; and firstly, with regard to his assertion, that the want of success of the Worcester Poultry Show, of last year (by no means an admitted fact), is to be attributed to the "extreme liberality of its prizes," I must beg most decidedly to differ from your correspondent; it may be merely a matter of opinion, but, I conceive, of all other causes, that was most likely to have enhanced its pretensions. The high rate of entrance is, however, a totally different thing, and may possibly have operated to reduce the number of exhibitors.

I am rather surprised that your correspondent has not received a prize-list of the ensuing Show, it having, to my knowledge, some time since, been published; but if he will apply to the active and obliging young Secretary, whose name and address he will find at the head of this department of your pleasing and instructive Journal, I am sure he will be immediately supplied with one. He will then perceive that the errors and inadvertence of past Committees have been corrected, and fully supplied by the present one; the list not only being still exceedingly liberal, but incontestably much better in detail than that proposed by him. The prizes being as follows:—Spanish, £3, £2, and £1; Coloured Dorkings (except Silver Greys), £2, £1, 10s.; Silver Grey Dorkings, £1 10s. and 10s.; White Dorkings (your own good suggestion being thus anticipated), £1 10s. and 10s.; three classes of Game, £2 and £1 each class; three classes of Cochins, £2 and £1 each class; four classes of Hamburgs, £2 and £1 each class; and so for the other classes.

I may mention that the Show is for chickens of 1858 only, and that the entrance-fees have been reduced to 6s. per pen—the precise sum named by your correspondent. I will add that, in the event of that gentleman having any influence with the Gloucester Poultry Show Committee, he cannot exercise it to a better or more useful purpose than to recommend their

adoption of the Worcester prize-list for 1858, with some trifling additions,—such as another prize or two in the variety class, a class for Single Game Bantam Cocks, &c. Their Show will certainly not then prove a failure of so decided a character as I regret it was in 1857.—A WORCESTERSHIRE AMATEUR.

PIGEONS.

(Continued from page 216.)

THE RATIONALE OF FLYING PIGEONS.

PIGEON flying is of very ancient date. The Eastern nations have, from time immemorial, used the Pigeon as a means of communication. The Romans were great Pigeon-faneiers, and flew Carrier Pigeons. The Egyptians and Turks also availed themselves of their power of returning to their home from a distance. In modern times, Belgium has been most noted for its breeds of flying Pigeons; and among the Belgians this practice has amounted almost to a mania. A few years back, they were much used in this country to carry information, respecting the funds and other intelligence, between London and Paris. But, since the introduction of the electric telegraph, Pigeon flying has gone much out of practice. Ere it is quite forgotten, however, or numbered among the fashions that have been, I will offer a few remarks on establishing a flight, training, and other matters connected with this subject.

All tame Pigeons have an affinity or attachment to their home, which draws them from a distance. This property, whatever it may be, seems implanted in the birds by the Almighty, to enable them to return home direct after being out in search of food.

Although all tame Pigeons possess this faculty, yet some varieties, or breeds, possess it in a greater or higher developed state than others; while some are but bad flyers, and, consequently, ill adapted for long journeys. The varieties that have been mostly used are:—The Carrier, Horseman, Drogon, Powling Horseman, Skinnun, Tumbler, Dovehouse Pigeon, Antwerp, Turbit, and Owl Pigeons, as also crosses and mixtures between many of the above.

Having procured the sorts, or breeds, desired, the first thing is to get them settled, or accustomed, to their new residence. As Pigeons are social beings, this may be the more easily accomplished, by procuring a few common, or tame, Pigeons, which are easily settled by keeping them in the loft for a week or fortnight, and allowing them to go into the trap, or area, to look about and see the neighbourhood. These tamer Pigeons will frequently be found useful, when first raising, or establishing, a flight of Pigeons, both as decoys to the wilder and shyer breeds, and also as nurses; and when no longer required may be got rid of. The wilder and better sorts of flying Pigeons are very difficult to settle in a new home, and the best are almost impossible to retain at liberty, though pairing them with mates already settled will sometimes induce them to remain. Therefore, it will be found safer and less troublesome to commence with young birds—"squeakers." But be careful to have them quite young; for, if once flown, and of good stock, they may prove treacherous, or might require shutting in so long as to injure their early training: the earlier the Pigeons are taught to rely on their own powers of returning home, the greater proficients are they likely to become.

Perhaps it would be more successful, where convenient, to procure good old birds, and breed from them in a separate loft, never letting them out, and thus to draught off the young, or place their eggs under others in the flying loft. But the generality of flying Pigeons will not require so much trouble. Young birds, and even old ones, may frequently be settled to a new abode with a little management, provided they have not been trained; whereas the wilder and more dashing breeds will often return home on obtaining their liberty, though they may have been kept up for twelve months or longer. Some few of the wildest birds will even refuse to breed during their confinement in a strange place, and, although the most difficult to manage, are generally the safest and best for homing purposes.

When settled, the Pigeons should be turned out, and put on the wing for exercise twice a-day,—early in the morning, and in the afternoon. When accustomed to this exercise,

they will continue on the wing for an hour or two at a time; and, after circling round their home for some time, they will start off, and take long circuits of a mile or two in extent; then returning, will take a tour in another direction. This is called "going an end:" it is of great use to them, as well from the exercise it affords their muscles and wings as from keeping them in remembrance of their homing faculty.

It is rarely advisable to train old Pigeons, as they do not often make proficient; and in case of their coming within range of their old home, so that the almost forgotten attraction overcomes that of their more distant and recent love, they will not unfrequently hasten there, and sometimes remain.

Young birds should be trained as soon as they fly strong at home. The training consists in taking them, at first, short distances from home, in various directions, and turning them loose, to find their way home; gradually increasing the distance, till they can at last perform long journeys. Great care is necessary to keep them in continual practice, as also in good flying condition,—strong, healthy, and clean, by means of good food and plenty of exercise; otherwise they may one day be missing, although they may have performed the same distance before. It must also be borne in mind, that the Pigeons should be properly conveyed to the place of starting,—not cramped, or with their plumage soiled or rumpled. Neither should a Pigeon be turned off with its crop too full, nor yet fasting, or it may be fatigued by the weight of its crop, or faint from weakness. The wilder a Pigeon is, the better chance, I think, it has of returning. It is generally considered that a cock homes fastest when driving to nest, and a hen when feeding young squabs; such times being preferred for flying night matches.

The way of sending a despatch, or attaching the letter, is simply to write that which it is desired to communicate on a small piece of light paper,—say about three or four inches square. This is rolled up about the size of a goose-quill, and laid between two of the tail feathers, where it is secured by means of a piece of fine binding wire, which is pushed into one or both the shafts of the feathers. Their vanes are then wrapped about the paper by twisting the wire round and round, so that the Pigeon carries it without being in the least inconvenienced in its flight. Some persons, I believe, wind the paper round the shank of the foot, or leg, and fasten it with worsted.

Pigeons on their journey are, however, liable to many accidents,—such as being shot, or killed by birds of prey; fatigue, owing to adverse winds or storms; or from injuries, consequent on rough or careless handling; or even from fogs. Thus, for safety, several are often despatched with the same message; or, to prevent deciphering, the communication may be written in private characters previously agreed to. Most Pigeons, when let off ("tossed") for homing, circle round several times, rising to a good height in the air, and then fly off in the direction of their home. The better ones make but few turns before shaping their course, and the pure Antweeps dart off in a line from the hand, and rarely make but one sweep for home.

It is generally believed that Pigeons find their way home by sight. This I consider an error; for it must be impossible for a Pigeon to discern its home at the distance of some hundred miles. Nor do I believe the reasoning and calculating powers of the Pigeon to be of such high order as to enable them to form private charts of such an extent of country, that they may fly by waymarks, as some have fancied. I believe it to be a natural faculty, or sense, implanted in them by the Almighty Creator, purposely to guide them to their homes; for have not the bee, the dog, the horse, and some other animals, the same faculty?

My opinion is, that it is a natural affinity, or attraction, that draws them homewards, and inclines them to take the direct line, and that by practice and cultivation this faculty is greatly increased and strengthened. I am, also, much inclined to believe, that if Pigeons are well trained for several successive generations, that the young ones have this faculty almost, as it were, by inheritance. Some breeds possess it in a higher degree than others, and even some individuals of the same family are superior to their brethren.

A high range of hills, or a fog, or mist, intervening between the Pigeon and its home, will so intercept, or interrupt, this

attraction, or affinity, as to weaken, or alter, its effect, on the feelings or sensibilities of the bird, and cause it to swerve from the direct course, or even so puzzle the individual as to cause it to be lost, which may account for some Pigeons being occasionally lost under such circumstances. Notwithstanding which, the London Pigeons, which are used to a foggy state of the atmosphere, are enabled to find their way through it; but it would then be impossible for them to see their home, or discern their waymarks, if they had any, at a very short distance. Besides, night matches could not be flown, if sight were their sole guide, for then they could not return in the dark.

I have had my Dragoons come home when it was quite dark, when flown late. Yet no one, who has seen the attempts of Pigeons to settle at night, when they had been disturbed, but must acknowledge, that, though the bird can make good use of its wings, it cannot see much in the dark.

Pigeons have been known to return to places where they have been kept, though they had no knowledge of the neighbourhood. Neither do they search for another place when their abode is covered with snow, which suddenly entirely changes the appearance of their home; and this they would be likely to do, if sight were the medium through which they knew it. A few bad-flying fancy Pigeons being frightened by the (to them) novel appearance, may become bewildered and lost; but this does not prove anything.

Pigeons, when homing, will sometimes fly past their homes, which is a curious fact, termed "over flying themselves." The Antweeps, I am informed, are liable to do so in short journeys. I have seen Pigeons, in coming home, pass their abodes, and then, as if the attraction was reversed, turn round and descend, which would not be likely if they flew by sight.

Many other facts might be collected, to prove that sight is not the main agent by which Pigeons return to their homes. Sight, undoubtedly, assists them in their manner of flying, as to height, to avoid objects and enemies, as well as in settling and finding the entrance to their house; otherwise, I believe, a Pigeon might be flown blindfolded. From long experience, and careful study of the case, I feel convinced, and have no hesitation in saying, that the power the Pigeon has of returning to its home, from places where it has never been before, arises from a natural attraction, or affinity, existing between the birds and its home, or, in other words, home is to the Pigeon what the north pole is to the compass.

The box, or basket, in which Pigeons are sent a distance in, to be tossed or let off, is so constructed that each is kept separate; it may be from six to eight inches deep, and ten or twelve inches broad; the length will depend on the number of compartments. These may be five inches broad in front, and may either be made straight, or the partitions may be put in obliquely, leaving only one inch width at the tail end, the wide end of the open spaces coming alternately. Thus, the Pigeons are placed in it alternately, head to tail, side by side, by which arrangement much space is economised. The lid is made in pieces, or so jointed, that only one bird may be let out at a time. A stout leather strap passes over all, and is secured by a buckle or padlock. The boxes should have an air-hole above the head of each Pigeon, as well as in the front end of each compartment. The bottom of the box, or basket, should be strewn with chaff, to keep their flights and tails clean and dry. In this way, Pigeons may be safely sent for long distances; carrying in the hand cramps the birds, and causes diarrhoea; crowding in a bag, or basket, soils their tails and wings, while the pocket is equally objectionable.

—B. P. BRENT.

(To be continued.)

OUR LETTER BOX.

BIRDS PURCHASED AFTER ENTRY.—There is a point in poultry exhibiting, on which different poultry breeders have very different opinions. It is this:—If a person enters a pen of birds for a Show, and after the entries have closed, but before the Show, he purchases other birds, has he a right to show them in the place of those he actually entered? Your opinion, or that of any other person who can solve the question, will greatly oblige.—ONE WAVERING BETWEEN TWO OPINIONS.

[We have no doubt upon the subject. If the birds purchased after the entry are long enough in the purchaser's possession, to satisfy the rules of the Exhibition and the description in the entry paper, the purchaser might exhibit them, in the place of those which he possessed at the time he made the entry. No one is deceived. It is not like entering a named horse for a race, and substituting another at the time of the contest.]

WEEKLY CALENDAR.

Day of Mth	Day of Week.	JULY 20—26, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
20	Tu	Alona obtusa.	30.026—29.951	81—47	W.	.04	8 af 4	4 af 8	32 af 11	10	6 1	201
21	W	Alona rostrata.	30.070—30.003	77—58	S.W.	—	9 4	3 8	morn.	11	6 4	202
22	Th	Alströmeria aurea.	29.980—29.910	78—56	S.W.	.20	11 4	2 8	5 0	12	6 7	203
23	F	Amelus lychnitis.	29.972—29.934	81—57	S.W.	—	12 4	0 8	51 0	13	6 9	204
24	S	Anacampseros angustifolia.	29.960—29.809	80—57	S.W.	—	13 4	VII.	49 1	14	6 11	205
25	SUN	8 SUN. APT. TRIN. ST. JAMES.	29.948—29.754	75—37	W.	—	15 4	58 7	58 2	15	6 12	206
26	M	[Duch. CAMBRIDGE BORN.]	29.902—29.955	77—48	S.W.	—	16 4	56 7	rises	☺	6 12	207

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 73°.0 and 51.8°, respectively. The greatest heat, 92°, occurred on the 25th, in 1844; and the lowest cold, 40°, on the 23rd, in 1843. During the period 144 days were fine, and on 103 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE late rains have wonderfully revived vegetation, and prepared the recently dug, or to be dug, ground for the reception of the autumn and winter crops. When transplanting, retain the leaves, as they assist to establish the plants in the ground. The reasons may not be obvious to all, but are too tedious to detail here. If any doubt is entertained, deprive *Endive*, *Celery*, or any other culinary vegetable, of a portion of its leaves at the time of planting, and plant a portion with the leaves entire. The experiment will prove the use and advantage of leaves.

BRUSSELS SPROUTS.—Plant out, as the weather is most favourable for the purpose.

CURLED KALE.—Plant out.

CAULIFLOWERS.—Plant the main crop in rich ground; it will be most useful for an autumn supply.

CUCUMBERS.—Remove the decayed leaves from the plants in the frames, and give them, in warm weather, a liberal supply of water about twice a week. Sow seed, if fruit is wanted through the winter. The plants, on ridges, to be mulched with clean straw, and a few bushy sticks, or short poles, stuck amongst them, on which to train the runners, to elevate the fruit, and by that means to preserve it from spotting, by contact with the moisture of the earth.

HERBS (for drying).—Gather, before their flowers open. To be spread out thinly, and dried quickly in the shade.

HORSERADISH.—Pull up the suckers between the main stools.

LETTUCE.—Thin, and transplant a sufficient quantity for use. To be kept well watered in dry weather.

ONIONS.—Pull up the autumn sown, if fit, and lay them in the sun, as advised last week; but, if the weather be showery, spread them out thinly, on a dry floor in an open shed, or in any other dry, airy place. Keep the spring-sown crops clear from weeds, and, if any remain too thick, thin them to a proper distance.

PARSLEY.—Sow, if not done in the early part of the month. Gather seed as it ripens, or the earliest and best will be lost.

POTATOES.—Plant a few rows, closer than for spring planting, to produce a late and generally an inferior crop, but with the flavour of new ones.

RADISHES.—Sow for a successional crop.

SAVOYS.—Plant out full crops, in the most open situations, in rows, from two feet to two feet and a half asunder, that they may have sufficient time and space to form full Cabbaged-heads, of a large growth, for winter use.

SPINACH.—Sow *Flanders*, for early winter use.

FRUIT GARDEN.

GRAPES (out of doors) are forward and abundant this season, and should receive every attention in stopping and training the shoots, for the admission of

sun and air, with the hope of a fine autumn to ripen the fruit. When the least speck of mildew appears on the fruit, apply flowers of sulphur.

STRAWBERRIES.—Prepare the borders for new plantations, by very deeply trenching, and afterwards lay on a dressing of half decomposed manure, and fork it in. Trench down the old worn-out beds, and plant with culinary vegetables.

FLOWER GARDEN.

AURICULAS.—Protect from heavy rains, as wet lodging in the crown, or heart, is very injurious to them.

BIENNIALS and PERENNIALS.—Prick out the seedlings into nursery-beds, a few inches apart, to grow stocky, before their final planting in September, and with more space from plant to plant, if it is intended to let them remain in the beds until spring.

CARNATIONS and PICOTEEES.—Proceed with layering as soon as possible, to get the plants well rooted and established, before placing them in their winter quarters.

EVERGREENS.—Prune where required. Clip *Box edgings* in showery weather; and cut off the decayed flowers, and the sides of *Thrift edgings*, if they are irregular.

PANSIES.—Seeds to be gathered as the pods ripen, being particular to save from flowers of good form and stout petals.

PINKS.—Continue to put in pipings; and plant out rooted pipings on beds of well-prepared soil, not too rich.

RANUNCULUSES.—Take up each root as the leaves turn yellow; for, if you wait until the whole collection is ready, some will have arrived at maturity, and will again have made a fresh start into growth, and materially injure their preservation.

ROSES.—The budding should now be carried on till finished.

VIOLETS.—Make fresh plantations of the *Russian*.

WILLIAM KEANE.

THE BEST TIME TO PROPAGATE BEDDING PLANTS.

A CORRESPONDENT has opened this question,—a question most essential to be thoroughly understood by every man and woman who plants the smallest flower-bed, or the largest flower garden, on the bedding system. After informing us of his conveniences for wintering his bedding plants, he goes on to ask—“Would it be better for me to strike cuttings now than in spring?”

I always thought that Mr. Fleming, at Trentham, and Mr. Foggo, at Shrubland Park, were the greatest planters of bedding plants in the three kingdoms; and I ought to know the number which would suffice to fill Mr. Foggo's domain. But, at the last Chiswick Show, I was told, by one who knows Trentham and Shrub-

land Park very well, that Mr. Fish, "our own Special Correspondent," plants out more bedding plants every year than either Mr. Fleming or Mr. Foggo. That took me by surprise, as he never hinted about the extent of his bedding; but I am not going to surprise anyone, only to discuss the question of what is the best time to strike bedding plants. I shall begin by saying, that, for the last five-and-twenty years, I have not had a quarter of the room which is thought to be necessary, to hold the number of plants, which I endeavoured to keep through the winter; and very likely the Messrs. F. F. F. (Fish, Fleming, and Foggo), have not an inch to spare the whole winter.

Therefore, this question, as I have just said, affects us all alike, and "Peter," our correspondent, is not one whit worse off for pot room, than any one of our dukes and great gardeners. Therefore, the best time to strike cuttings of bedding plants, may not be the most suitable time for our convenience. If we could have all things best, we should propagate all our best bedding plants in the autumn, and pot off the smallest of them into single pots, not later than the middle of February, and we should have every one of them in bloom before they were planted out. Yea, some of us would grow those for the best beds into exhibition-looking plants, so that a change from spring flowers, to the bedding system, would take no more time than was necessary to change pots and plants. Something of that kind will be done after we are all dead and gone; but no one who is alive to day will ever see that system. Therefore, it is waste of money to give prizes for growing bedding plants into specimens, and it only makes people's teeth water to write about plenty of room, in winter, for any one single thing we grow, and must keep from frost; for the man with a single garret-window is just as well off for room as my lord duke: all are in the same boat, fighting against the tide. But, holding the helm to-day, I shall steer into "Peter's" harbour, where the whole country, as far as the eye can reach, is covered with bedding plants, and where there is no more room, to keep them over the winter, than one greenhouse and some cold pits.

In these parts, experience has taught the fact, that by preserving all the healthy old Geraniums, of the *Scarlet* or *Horseshoe* breed, in a half-dried state, in different ways,—from the cellar up to the top of the house, and in the offices, if there be any,—a very great number of very small Geraniums can be kept in one ordinary pot the whole winter. Twenty-five plants in one pot will soon count up to a high figure, when they come to be all potted off in the spring;—but say a dozen well-rooted cuttings of these Geraniums are put into a number 32-pot by the middle of September. The smallest cuttings are used for this kind of work; sometimes fourteen or fifteen cuttings, without roots, are put in for a dozen plants; either way, September is early enough for that kind of wintering them. Then it follows, that as old Geraniums cannot be kept over the winter, in a fit state to give a sufficient number of cuttings in the spring, the best plan for all is, to make their *Horseshoe* Geranium cuttings late in September, if the room is very limited, and earlier and more early, according to the winter accommodation for keeping them; it will pay to make such cuttings as early as July; put them singly into number 60-pots in October. Keep them in cold pits all the winter; pot them again, into large 48-pots, in February; and sell them, in good bloom, by the 10th of May, for 6s. a dozen—pots and all. I say this system, which is the best system of all, pays in the vicinity of the Experimental garden, and all round London. Therefore, any of my readers, in that circle, who cannot strike, grow, and keep twelve such good scarlet Geraniums for less than five or six shillings,

had much better not make the attempt, but buy them when it is time to put them into the ground.

Fair *Tom Thumbs* can be had, in May, for 4s. a dozen, hereabouts; but the very best, at 6s., are the cheapest to cover the ground with. But I must say, that to plant so many *Tom Thumbs*, as they do about London, is downright vulgarism—taken as a matter of taste. If there must needs be so much scarlet, in the name of goodness let us have it from a dozen kinds of plants, and in as many tints of scarlet as the stock of kinds in the country can produce. Scunner (an old Scotch word, which means more than a surfeit) is the only word in the English, Scotch, or Irish languages, to represent the feeling produced on certain eyes and minds, at seeing so much uniformity of one kind of scarlet flower in the valley of the Thames, whose water, at London-bridge, gives the scunner to us of the country.

It is not too early, then, to begin to make such Geranium cuttings this very day; but it is six weeks too soon, for one who attempts to bring the greatest number of plants through the winter, in the smallest space in which they will keep alive.

As the best kinds of bedders, from the greenhouse class of Geraniums, make only flowering shoots during the summer—like the *Uniques*; and as plants, made from such flowering wood, will always take to the more loose style of growing; it is best to make cuttings of them early in the spring. But to one who cannot get up a good cutting bed, as early as February, this plan is not applicable; the second best plan, is, to make cuttings of them early in August, out of doors; and the third best plan, is, to make cuttings of them—in pots and in-doors—in September.

The reason for making them in August—a month earlier than the *Scarlets*—is, that some of them take double the time of the *Scarlets* to make roots, and that they do not get so gross and bulky as the *Scarlets*, although they might root in a week. Very strong kinds, of both classes, are more safe to keep in winter, by being rooted in pots instead of in the open ground. But when the thing is well done in the open air, and the eye can tell the exact degree of vigour which the rooted cuttings should not exceed, before they are taken up and potted, it is astonishing the difference it makes in the health of the plants; it is the next thing to making July cuttings, and to pot from size to size as the roots fill up. But there is another thing connected with the vigour of the cutting, and that of the mother plant, which is well known to, and practised by, first-rate gardeners, and which is best exemplified from the revival of the *Golden Chain*, which is one of the oldest of the present bedders.

There was not a man alive in 1840, who could get one healthy plant from all the *Golden Chain* cuttings in the three kingdoms. It took five or six years to get them up, step by step, till a lucky mistake in the peat, compost put them on their legs. After that there was little trouble with them, peat or no peat.

Now, or rather next February, nine out of every ten *Petunias*, from which cuttings are then to be made, will be no better off than the *Golden Chain* was in 1842 or 1843. They are one-half starved and one-half flower-bound,—a new term to express a common condition of *Petunias* which are made from old flowering plants. The best way to have a few strong, healthy plants of *Petunias*, to cut from for spring cuttings, is to make them in July or August, from plants which have just begun to grow freely out of doors,—just as the *Golden Chain* was, when it got to its standard of health in the compost of peat. If these early cuttings of *Petunias* get one good shift in September, and are stopped frequently, and not allowed to form a bloom, they will be in the very best possible state for store plants, to take cuttings from in the spring.

The second best plants of Petunias are older ones, which were reserved from the May planting, and kept in pots all the summer, and were wintered in the same pots; and the third best way is, to make such cuttings as one can pick up from a bed of Petunias in September, to be reserved in the cutting-pots all the winter. In all this, and for this generation, spring cuttings of Petunias are meant for planting beds and baskets with; but, when the winter room is no object, August or September cuttings of them, and the plants in single pots, and shifted again in March, will be the grand thing for the flower gardener.

As for Fuchsias, they are not the best things in the world for beds; but, when they are made on purpose for bedding, they will be treated more like the Dahlias,—kept dry, or half dry, in winter, and parted in the spring, and, perhaps, stimulated by a little heat, to get them ready for flowering by the middle or end of May; and all the best new ones will be cut in November, and made into cuttings, which will be kept growing, and stopped all through the winter and spring, till bedding time; but we shall never see that become general. As it is, the best bedding Fuchsias of the present day should either be kept from too much frost, in the same beds, or be lifted at the end of the autumn, with balls, and kept half dry, in-doors, and parted and planted out in April.

All the bedding Calceolarias are best from cuttings made late in the autumn; but for “heights,” some old plants of them must be kept from year to year; if there is room, they give no trouble to winter.

(*To be continued.*) D. BEATON.

SALAD CULTURE.

THE providing a due supply of crisp salads is one of the important duties of a gardener. The end of June, and early part of July, is the chief time to make due preparation for autumn and winter. Families who stay in the country altogether, or those who possess town gardens, do not fall into the same category as those of the highest orders of society. Many of the latter make a London season of from March to July, and then, after a sojourn at their seats for a few weeks, betake themselves to Scotland for a couple of months or more. But there are other classes, whose movements are of an intermediate character; and I shall, therefore, take into consideration, a constant supply of good salads from August to Christmas, or later; as they require a special kind of treatment, differing somewhat from summer salads, which are easily provided. The following may constitute a fair sample for discussion:—Celery, Endive, Lettuce, Cresses, Radishes, and Rampion.

CELERY.—Those who cultivate early Celery, sow in heat in February, and transplant and cultivate with rapidity. By such means they have pretty good Celery in July. Celery, however, for autumn, and to eat tender and crisp, need not be sown before the middle of March. In these days of exhibition, there seems to be but one prevailing idea, that everything must be produced as large as possible. In this way, I fear the exhibitions have done mischief, and many things I could name are by no means so tender, when thus treated,—Celery among the rest. The tenderness of Celery, beyond all doubt, depends on the speed and regularity of its growth; and, as the huge Celery we see in markets, and on exhibition tables, must, of necessity, require a long time to produce it, there is a greater chance of its having to undergo the vicissitudes of drought, with occasional low temperatures. Celery loves a warm atmosphere, and demands, as to high culture, continual moisture at the root. I must here

remark on the tendency of Celery to “bolt,” or run to blossom. Many persons are apt to imagine that they have a spurious breed, but this is not obliged to be the case; indeed, there is little spurious Celery left in the country. In the majority of cases, Celery “runs” because it has become stunted, or checked, in some part of its progress. Throughout all its culture, it should receive as little check as possible. It should be removed to its final destination before the plant acquires much size; for, if removed after growing strong, and acquiring a stoutness, it is almost sure to run. Care should be taken that it receives plenty of water, in all its stages, especially whilst young, and undergoing removals; and, on its receiving any check, recourse may be had to liquid manure, as also shading when transplanted. A few boughs will accomplish the latter. Much has been said about the soiling, or earthing, of Celery. Some are for very frequent and early applications, others the reverse. Now, in settling this affair, we should bear in mind what the earthing is intended to accomplish: this is, of course, chiefly blanching, and in order to produce longer stalks than would otherwise be the case. There is, however, another purpose sometimes accomplished by earthing, and that is, shutting in the moisture after a dry period and on the heels of rain. For this alone a moderate quantity of soil will suffice. As to the blanching of Celery, that is easily carried out, after the plant has become very strong; and, were it not that length of stick, or stalk, is so desirable, one, or at most two, earthings might suffice. A little earth somewhat frequently, is, therefore, requisite, in order to induce length of stem, and to keep the Celery from a tendency to “sucker.” It is of the utmost importance, that the first earthing be carefully performed: whether the stem shall prove crooked or straight, depends mostly on this. Several fanciful modes of earthing-up have been practised,—such as tying the plants with matting, &c.; but I will undertake to produce as straight and good Celery by simple hand earthing,—the old-fashioned mode,—as by any or all the other appliances together. The operator, having loosened and prepared soil to put to the stems, gathers up every leaf in its proper place with both hands: he must be in earnest. The plant, thus placed in exact position, is transferred to the left hand; the right, being at liberty, draws the soil to the stem on the right hand, pressing it. The right hand now takes the plant, and the left hand must do just as the right did. This done, a little soil should be drawn, with hoe or spade, to “back up,” as it is termed, that placed by the hand, or it will crumble away. The plant will now appear as firm and systematic as a soldier on sentry; or as the most autocratical London policeman; and a second, or third perhaps, hand-earthing is given, after which, at the approach of cold weather, the spade will suffice.

ENDIVE.—This is seldom good in hot weather, and yet is very impatient of severe frosts and moisture combined. The fact is, that it is very excitable, and, unless peculiarly situated, soon runs to blossom in cases of much heat. Few gardeners sow before the beginning of June, unless for some special occasion. July is the principal month, and three distinct sowings—at the beginning, middle, and the end—will supply the table from October to March, with proper management. Endive, as our readers probably know, is good in proportion to the thickness of the heart or interior portion, and, of course, to its being thoroughly blanched; and, in order to obtain a dense and thick interior, it requires to be cut over occasionally whilst in the seed-bed. I generally cut it twice, sometimes thrice; removing about one-half the tops with a scythe or knife. It thus becomes very stout by planting time. Endives, sown in the course of July, may be removed of almost any

size, without danger of running to blossom. It requires a rich and mellow soil; and rotten manures may be applied with a liberal hand. Liquid manures, also, are of much benefit, used occasionally, as, indeed, they are to all salad crops.

LETTUCES.—The production of stout and compact Lettuces is the pride of most good gardeners; and some pains are necessary to accomplish this, especially during the heat of summer. Partially shaded situations are frequently selected for them; but in many summers the propriety of this course is to be doubted. The fact is, they require both rich and strong soil, and constant moisture. Soils naturally loamy, or of a somewhat adhesive character, produce them best in hot weather, or, indeed, at any other period, providing no stagnation or moisture exists beneath. Without a most generous soil, it is immaterial what situation is selected for them. Three sowings—one in the beginning of June, a second in the third week, and a third in the first week of July—will provide for the salad bowl, from soon after Midsummer till nearly Christmas. For all these sowings, the true *Bath Cos* is superior, if really good, and very crisp Lettuces are desired. These, however, require tying up, to blanch: those who have not time to tie, may sow the *Paris Cos*, which succeeds well without. They require frequent waterings during all dry weather, and rejoice in liquid manure. But this should not be applied too near the time of using them.

CRESESSES.—The curled, and the broad-leaved American, are the two most distinct and useful kinds,—the latter approaching the Water Cress in character. The curled Cress requires to be somewhat frequently sown, as it soon runs to seed; the other lasts a considerable time, and bears the hardest frosts of winter. Curled Cress may be sown liberally in July and August; it much improves on good soil. It is best in drills, six inches apart, the plants thinned to four inches in the row. Many sow it broadcast, and very thickly; but the foliage is far superior this way, and cuts a much better figure at table: for badly-grown Cress is on a par with badly-grown Parsley,—it looks messy, and more like food for swine than human beings. The American, or broad Cress, may be sown twice,—the beginning of July and the end of the month,—in drills, eight inches apart, the plants thinned to five inches in the drill. It loves a damp soil.

RADISHES, for autumn and winter use, may be sown at the end of July, the second week in August, and the first week of September. They require a loose and friable soil, unmanured; they may be sown broadcast. The Turnip kinds are best for the two first sowings; the last may be *Wood's Short-topped*, the kind used for frames.

RAMPION is sown earlier in the season,—generally in June,—in drills, nine inches apart, and the plants thinned to about three inches. Some good cultivators transplant it, in order to prevent fibres, to which it is much given in some soils. The root is like a long Radish, but white, and is pared, or scraped, for use.

Cleanly culture, and the use of the hoe, are requisite with most of these salads; and frequent waterings in very dry weather. Towards November, some will require a slight protection for the winter. The Celery will then need one thorough earthing, to complete the blanching and to keep out frost.

Snails and slugs are very troublesome to Celery, and in their ravages much deface the sticks, and seriously reduce its bulk. I find it necessary, therefore, to use quicklime, dredging it thoroughly amongst the foliage. This is performed just previous to the first earthing-up, and destroys thousands.

The washing and cleansing salads properly is most important, and requires particular management. No

kind of salad should lay in water more than an hour, and the water should be of as low a temperature as possible, short of freezing. Two waters should be always used; the salad may lay in the first, to soak for nearly an hour, and should be washed as clean as possible in that water; then transferred to a clean vessel of fresh cold water, and well rinsed therein. If slugs or other insects are suspected, a little salt, thrown in the first water, will give an account of them. When salad is somewhat frozen in winter, it is well to throw it for half a dozen hours in a dark corner, in some place where there is neither fire nor frost; it will there partially and slowly melt, and may be then trimmed and thrown into the coldest water that can be obtained,—some from beneath ice, at a temperature of 34° to 37°,—for the slower it is thawed, the fresher and finer-flavoured it will be. There should, however, be an exception made in favour of salad in a flagging or withery condition; it is surely a fair consideration, whether water of a little higher temperature would not be desirable, in order that the salad should absorb a little to restore crispness. This I throw out as a hint. It may not be generally known, that Celery, if cut short,—say to six or seven inches,—and every leaf, after trimming, slit down at equal distances longitudinally, in tolerably close and parallel lines, and then thrown into water for an hour or two, will all roll back and curl beautifully, making a fine figure for an ornamental glass stand, which is much used in some quarters for Celery. In this condition the Celery has the eloquence of a well-handled bouquet.

With regard to Lettuces, I would have it remembered, that good, crisp, *Bath Cos* Lettuces, through November, and nearly up to Christmas, are, indeed, valuable adjuncts, of a first-rate salad bowl. To be sure, we have fine yellow Battavian Endive to represent it, if absent; but both their flavour, and, I may add, their medicinal qualities differ. The tonic bitter of the Endive, and the sedative character of good Lettuces, are well known; and here, be it observed, there is no unpleasant scents arising from them like Onions. I feel assured that a salad bowl with several articles in it, is more congenial to the human stomach, than that in which one, or at most two characters prevail. Indeed, were it not for this mixture of ingredients of differing characters, how shall we account for the health and longevity of many known as good table men; that is, those who enjoy the good things which their Maker has granted for their use, in a liberal, yet philosophical way. But the celebrated Rev. Sidney Smith was an advocate of even Onions; for, in his famous recipe for a salad, if I remember right, he recommends rubbing the bowl with Onions. Perhaps, according to Pope, in his landscaping,—

“Snatching a grace beyond the reach of art.”

R. ERRINGTON.

SOCIAL ECONOMICS.

PREVENTING EARLY VINES BREAKING PREMATURELY.

CAN any coadjutor, or reader, give us his experience and assistance in this matter? Though I have never had the chance of experimenting in this field, I do feel proud, that such men as Mr Forbes, at Woburn Abbey, and Mr. Judd, at Althorpe, and others, place on their employer's table, and also before our great societies, new Grapes, whilst many feel very happy if they can get old ones. The complaint of all such extra early forcers, however, is, that they cannot keep the buds from breaking prematurely in summer; and that this not only weakens the Vine, but gives them a scantier crop than they might otherwise have. Though the early house at Woburn had been thoroughly ex-

posed for some time, by the removal of the sashes, many of the buds had burst and been rubbed off on the 23d June. Mr. Forbes had previously tried almost every plan,—such as keeping the house cool and darkish, with plenty of air, by using wooden shutters instead of the sashes,—but still the heat of the season would cause growth, and prevent the due resting of the Vine. The subject is one of great importance, as many gentlemen would like to have Grapes every day in the year. I understand Mr. Forbes very nearly accomplishes this, being seldom more than ten or fourteen days out of Grapes. This is chiefly effected by having them very late and very early; and yet he has no great number of houses. Two late houses were in bloom, and coming into bloom, on the 23d of June. This lateness is effected by having the Vines exposed until the bunches are showing. Others, from those perfectly ripe, were succeeding in various stages. These extra early ones seem to be the difficulty with these great experienced gardeners; not difficulty as to getting them, but to getting them in quantity so as to please themselves. This difficulty is chiefly, or altogether, owing to the facts, that the Vine *will* grow in warm weather, and that the buds will break long before they are wanted to break. To neutralise these evils, many modes have been resorted to, but not so successful as the operators would wish. Counsel, therefore, or practical deductions from experience, would be generally acceptable. From want of practice, I am not in a position to offer either; but I would present a suggestion, and leave it to be dealt with just for so much as it may be deemed worth. It was presented to my mind by the comparative early forcing of some other things, and even the moderate early forcing of Vines. My impression is, that these extra early Grapes, which gardeners now wish to be in a state of rest, are stripped and pruned too early, and hence the main buds must burst. Had I a house of ripe Grapes in March, I would keep up the requisite heat until the wood was thoroughly ripened; and then gradually reduce the temperature, taking care that, equally gradually, the roots should be getting drier, and in summer all rains be excluded from the border. This would lessen vigour and growth, but not stop either altogether; and, instead of pruning so early, as to force that growth into the principal buds, I would, in addition, allow a good number of small laterals to grow, which would act as safety valves, alike preventing the bursting of the buds and supplying them with more organised material. Then, three weeks or so before I wished the Vines to break, I would prune away these laterals, and do what more pruning was necessary: in a few days more, I would water the border, to bring the roots into vigorous action: then I should expect the natural principle of growth would find its way into the buds, which, by this means, had been kept unbroken. The comparative rest given, by dryness at the roots, and the remaining vigour allowed to expend itself in spray for a time, I should deem safer than early pruning, or any other mode of retarding in summer. But this is a mere suggestion, which, in the case of such Vines, I have had no opportunity of proving thoroughly.

BREADTH OF VIEW IN FLOWER GARDENS.

Sometimes I see a beautiful little lawn, and fine-managed flower beds, deprived of much of their charm from inattention to this idea. Here is a beautiful little mansion, with a fine lawn in front of it, backed at a distance by huge masses of Rhododendrons and other evergreens, and the sides flanked in a manner somewhat similar. But the flower beds are clustered chiefly near the mansion, and the greatest breadth of lawn is between them and the backgrounds, an ar-

range which lessens the effect of the flowers, and contrasts with the size and massiveness of the mansion. When a group of beds are so placed, they can hardly be too geometric in their outline. In general, an irregular outline of beds on the two sides, with an opening vista of lawn in the centre, but also varied in outline, would be far more telling, and would give a breadth of view and massiveness to the mansion. It is quite another affair when the whole space is a regular flower garden, for then the fine effect of a lawn is little thought of; but where that, as in the present case, enters as one of the features of the place, flower-beds ought either to be grouped at a distance from the house, or at the sides, if near it; so that there may be broad openings of turf, to connect the house with the lawn beyond, instead of that being intercepted, by flower-beds occupying all the width of the lawn, close to the mansion, as seems to be now the fashion in many pretty places.

UNITY OF EXPRESSION.

We hardly expect this in small gardens. There we can hardly find fault, if a vase of Seeley's is placed near the old Willow Pollard, that serves instead of a rustic basket. We would be inclined to muse on the charms of variety, if, besides a beautiful Chinese porcelain vessel, we were called upon to admire the taste displayed, in throwing into a heap bits of granite, sandstone, brickbats, and fire-clinkers, dignified with the title of *our rockwork*. Variety is ever pleasing, and if the mixture is somewhat heterogeneous, the owner cannot help it, as his place is too small to keep them separate and distinct. The same desire and love of the opposites, is carried out in many places, where there can be no reason for their being there, except that the owners are themselves pleased with them, and expect their friends to be equally gratified. True, there are, for a definite purpose, rooteries and rockeries in the Crystal Palace itself; but should we look to Sir Joseph Paxton, as an authority and an example, if he had clustered the scenery, he has placed around the pre-Adamite animals, upon a lawn in front of the principal terrace? A similar feat is being performed daily by many who are otherwise clear-headed, and developing every mark of genius. True, there are places where it would be natural to look for masses and boulders of rock; but there the gardening should be somewhat in character,—in agreement as well as in contrast. But, in positions where no such things could be naturally expected, I cannot as yet see that a beautiful lawn is to be improved, by a heap of stones, or roots, thrown together in its centre, or a prominent position on one of its sides; though, in a retired, secluded corner, such a heap, decorated with plants, might be congruous and suitable enough. Then, however great the contrast, it was not forced upon you, you visited it at your leisure; and then you looked upon it not as an incongruous part of a whole, but as a whole in itself, and, therefore, congruous. When, last year, I attempted to give an account of Shrublands, and stated that a considerable amount of its interest was to be found in its contrasts, a clever correspondent told me, I was far too much taken with these contrasts, that he considered them deformities, and that the mind was as little prepared for some of them, as a visitor to a princely drawing-room, who, on opening the door, is unexpectedly ushered in amid the filth and discomforts of a bog-trotter's hut. Now, I by no means admit, that the contrasts at Shrublands are anything so great as that; but, even allowing the contrasts to be great, there is, at least, the barrier, the door, the distinctive line to be passed; so that all along, you are presented at one time with unity of expression, or one set of ideas. I found this carried out the other day, where a nice fernery has been formed close to a lawn, but completely concealed

from it by Laurels, &c. You expect nothing of the kind, and you are doubly gratified; first, on finding another fernery; and secondly, finding it has an appropriate home, and neither interfered with, nor interfering with other scenery. A rockwork in a dell, or anywhere apart by itself, would command its due attention. Place it in the middle, or at the side of a fine lawn, as a prominent feature, where mansion, conservatory, and flower-beds,—all that is elegant and lovely,—come at one sweep before the eye; and then I should like to be informed how, in such circumstances, such heaps of stones, roots, and clinkers, can add either interest, beauty, harmony, or fitness to the scene.

R. FISH.

NOTES FROM THE CONTINENT.—No. 27.

GHEENT.

A FEW minutes walk along one of the avenue-planted roads, outside the old city of Ghent, brings us to the nursery of M. Louis Van Houtte,—the most complete and extensive horticultural establishment on the Continent. It forms quite a colony in itself, with its villa, its rows of residences, its schools, its seed-shops, its suit of sheds for drying and cleaning, storing and packing bulbs and plants, its machinery for pumping water, and its gas-works. Moreover, a botanical periodical, called *Flore des Serres et des Jardins de l'Europe*, is printed and published upon the premises; and, looking in at the windows of a long substantial building, I saw many draughtsmen employed in preparing the plates with which it is illustrated; and in another I saw the printing machines at work. This garden is deservedly the Government *Institut Horticole*; and many are the students who gain their knowledge of gardening from this establishment. They pay a certain premium, live upon the grounds, learn the business practically by taking their part in the operations of the garden, and theoretically by hearing lectures, and taking lessons, from proficient teachers, in botany, geography, drawing, mensuration, and all other branches of education with which it is necessary a first-class gardener should be acquainted. The advantages of this garden are not reserved for the natives of Belgium; foreigners are liberally admitted to participate in them, and we accordingly find men from many countries among the students. The greater part of the foreigners are Germans; but not unfrequently the son of an English nurseryman or gardener may be found among them.

There are very many glass structures of all sizes in this garden, a large proportion of them being span-roofed pits, well adapted for cultivation, and standing parallel with each other; indeed, all the houses are grouped together in a very convenient and business-like way. The largest house is devoted to Camellias, and is nearly 300 feet long. The tank in the centre of the Victoria-house was planted over at the time of my visit, and the place filled with a promising lot of young Palms.

Hyacinths, and bulbs generally, Roses, herbaceous plants, Conifers, hardy trees and shrubs, and fruit trees, are all grown here, upon a scale unknown in any other place I have visited; and in-doors the same system prevails. The collections of stove and greenhouse plants, Ferns, and Orchids, are most extensive. A hurried visit to such a vast establishment, containing such an infinity of plants, leaves the mind almost in a bewildered state. In fact, it is one of those places of which it is impossible to bring away a definite idea. I shall not, therefore, attempt the difficult task of describing this garden, but content myself with noting a few of the principal things with which I was struck.

By nothing is the rapid progress made by the gardening of the day so well exemplified as by the family of the Gesneraceous plants. It was only a few years ago that we were charmed by the appearance of *Achimenes* (or, as we now call it, *Tydaea*) *gigantea*: it is now to be found in gardens of the humblest class. Two years ago it was followed by *Tydaea amabilis*, one of the most delicate and beautiful things in the world; but now the number of their allies are without limit. The whole side of one house here was occupied with hybrid *Tydaes*; and, as the greater part of them were in bloom, they

formed the most brilliant floral exhibition I ever had the good fortune to behold. There were flowers of every hue—pure creamy white, without spot or fleck, delicate pink, rosy pink with darker markings, bright scarlet with reddish-brown spots, and crimson with dottings almost black; indeed, they varied as much as *Caleeolarias*, and no two were to be found just alike. The parents from which these lovely things were raised were *Tydaea gigantea*, *Warscewiczii*, *amabilis*, and *Locheria magnifica*. This is a new line in which the hybridiser has been employing his skill, and who can tell what novelties are yet to be produced from this source? Only the most distinct among those I saw were to be named, and sent out; among the rejected ones are many far superior to anything we could obtain for love or money a few years ago. All who have time and opportunity should obtain the best sorts, which are now on sale, and try what they can themselves raise in this beautiful class of plants, the cultivation of which is so simple and inexpensive. The best sorts, in addition to those named above, are *Ortgiesii*, *Baron de Pret*, *Comte Théod*, *Dr. Picouline*, and *Eeckhouttei*. They are very cheap, the price here being from 50 centimes to 2 francs each plant (that is, 4 $\frac{1}{2}$ d. to 1s. 7d. English money). *Neigelia amabilis* is a very pretty thing, with the habit of *Gesnera zebrina*, but the flowers creamy white.

I saw here two *Aralias*, which are new, *A. Brownii*, with tri-partate leaves, and *A. farinifera*, with digitate leaves of immense size. *Aristolochia cornuta*, with small reddish-brown flowers. *Tacca pinnatifida*, a curious, three-parted leaved, Arum-like plant, the root of which forms an article of food for the South Sea Islanders. *Cossignia Borbonica*, a beautiful stove plant, with pinnate leaves, the principal veins of which are orange-coloured. *Tradescantia argentea*, which is only a rather more silvery variety of *T. zebrina*. A variegated variety of *Kennedya monophylla*, and the same of *Weigela amabilis*, the latter dull. A copper-coloured Maple. Some beautiful hybrid Lantanas. *Oxalis tropaeoloides*, with very small purple leaves: it creeps over the ground like a Lycopod, and is quite hardy.

Conifers are very extensively grown here; for instance, I saw fourteen hundred plants of *Pinus palustris*, and an equal number of many others. The *Wellingtonia* is hardy here. There was one nearly six feet high, which had stood the last three or four winters unprotected.—KARL.

RESULTS OF TEN YEARS' BEE-KEEPING.

IN reply to some inquiries, relative to what is stated at p. 208, I give you the dates when the empty boxes were substituted.

1847, 13th of August. 1848, 17th of August. 1849, 13th of August. 1850, 19th of August. 1851, 19th of August. 1853, 8th of October—there was but little, and it had been left, but none was made after the early part of August. 1855, 14th of August. 1856, 29th of July—but too early by a fortnight, as the bees continued to make honey in the fresh box until after the middle of August. 1857, 3rd of August.

The size of the hive is twelve inches in height, and sixteen inches in diameter. The box sixteen inches square, but is unnecessarily large.

No brood comb ever occurs in the box, but some pollen very variable in quantity. The locality is not very favourable, and a considerable number of bees are kept in the neighbourhood. The ventilation is carefully attended to. This is, in truth, the only trouble the bees give.

I have given you the results of the last ten years, as in those years only the accounts have been kept; but the stock is thirteen years old.

I omitted to say, that in two years, when there seemed some disposition to swarm, an extra box was placed in front of the ordinary one; that nearest the hive being removed in August, and the other put in its place. The bees have, in all cases but one, within my knowledge, taken kindly to this place. In this one case they refused to use the box, although it contained a portion of comb made by another set the previous year, and swarmed out.

The plan is so simple, and appears to me so successful, that I hope others will try it.

Ventilation is easily provided for in the hive, by putting it on a framed board, with a passage on both sides, guarded on the furthest side by a piece of perforated zinc, and a slide.—TYRO.

[Thanks for these explanations. Please to repeat your query about climbers, on a paper not giving statements about bees. They go to different authorities.—ED.]

ON GAME PRESERVES AND FENCES.

By Mr. A. FORSYTH.

THE Princes of Germany, with a princely and father-like care for the poor, caused the sides of the highways to be planted with fruit trees, not only to increase the value of the property, but also to afford shade to the traveller, and refreshment on the way. Mr. Loudon mentions some such avenues that he passed through sixty miles in length, and loaded with fruit. Surely such avenues of fruit trees are worthy of our imitation. I would not dwell upon this subject so much, were it not for this reason,—that the farm is head-quarters for game; and I regret to see the farmer plodding continually with the herbaceous annual, as if, forsooth, no other plant would pay; whereas the Willow twig and the Gorse twig are more substantial and more wholesome fodder than half the herbage usually collected and dried as hay; and, moreover, it is impossible to carry the culture of herbaceous crops to the greatest perfection without the shelter which ligneous plants alone can accomplish.

It is really astonishing to find, that of all the valuable shrubs and trees that will bear the open air in England, I cannot call to mind more than one that I have ever seen cultivated by the farmer for its spray, and that one is the Gorse. Upon the present occasion, I must confine myself to naming the Willow and the Mountain Ash as two more of the greatest importance to the agriculturist and the game preserves. The land that will only yield rushes and dirty unhealthy herbage, from being occasionally inundated with muddy water, will yield Osier twigs, a clean standing healthy crop three feet high, with rich juice and a great weight of crop. Loudon mentions, on the authority of Bosc, a French botanist, that horses fed on Willow shoots will travel twenty leagues a day.

And, in regard to the Mountain Ash, its name implies it to be a tenant of the stormy region; it is a plant of rapid growth, thriving in a ridge of poor soil, where few plants could live. Its plants are cheap in the nurseries, and it bears transplanting with less loss than most trees. It is readily obtained, and at a very cheap rate, by sowing on the mountains the ripe berries, bearing in mind that they lie a whole year in the ground before they vegetate. As this tree fruits freely, and birds greedily eat the fruit, it is very strange that we do not find it turned to profitable account. From my own experience I have found one valuable use of this fruit. A quantity of the berries were gathered in bunches, and built into a stack of Barley, in harvest-time; and, in the following spring, the stack being taken down to be thrashed, the berries were found to have lost much of their acidity, and were not unpleasant to the taste, and were greedily eaten by poultry and various domestic animals. In times of scarcity these berries have been kiln-dried and ground as food for man, thereby showing that they might safely be used at any time in this dried state for pigs and poultry. I am the more anxious to get this tree introduced into our domestic economy, on account of the berries being of such importance to feed birds and game, and thereby save corn, and preserve the character of these creatures from being branded as thieves.

But, besides fencing, I have two other equally important functions for it to perform, namely, to shelter the enclosed and the adjoining crop, and to produce either fine fruit, from which the farmer shall obtain a regular vintage gathering, or good fodder for cattle. The Gooseberry, Currant, and Raspberry, may be given as examples of the sorts of native fruits that I propose to cultivate; and I would fain bring into notice the valuable but neglected Bramble, as worthy of the greatest consideration for the making of wine: it holds up its clusters to our view year after year, as the Vine of our own country, and tears us with its spines, as if to remind us of the unde-

served neglect of its merits. I have tasted Blackberries here, on a south bank, hanging over the Churnet, that were equal to the much-esteemed Mulberry, which they very much resembled, and when bruised gave a juice that only required preserving to yield good wine. The plant, moreover, has length of stem and strength of spine, to make hedges and entanglements to any degree of prickly closeness that may be desired. Even the common Barberry is infinitely superior to the Thorn as a hedge-plant, growing, as it does, to a moderate height, and very compact and spiny, and yielding plenty of fruit, that can, with care and skill, be made available in domestic economy. *Berberis aquifolium*, as has been already observed, is everything that could be desired, being evergreen, and of a dwarf, close habit of growth, equal to the Holly in prickly foliage, and superior to the Holly in yielding large and abundant blossoms, succeeded by valuable fruits. As proofs of this latter statement, I may mention the fact, that Lord Vernon planted thousands of these at Sudbury Hall, in Derbyshire; and, under the able management of Mr. Mitchell, these grew beautifully, and fruited to such an extent that the fruit was gathered in basketsful to feed poultry. But this plant, owing to its expense, could not at this time be introduced into ordinary samples of farming; but is admirably suited for the *ferme ornée*, for which this part of my article is principally intended.

Game are uncommonly fond of the bark of trees, and the leaves and seeds of grasses. Rabbits kept in a paved yard will grow fat with Willow and Fir branches, and, owing to the particular form of the mouth of the rabbit and the hare, they can bark trees more readily when the stick lies horizontally; and this is important in game preserving and in tree preserving to be understood, since a cartload of Willow, or other branches, strewn about the haunts of hares and rabbits, feeds them with that article, and saves standing timber; and they will never twist their necks to eat the upright bark if they can get it straightforward and lying flat. The Willow tree is suitable to any farm, and to any farmer; even the tenant-at-will may reap a return from a plantation of Willows the first year, for he will only have to plant the truncheons a little thicker in the rows than the leasehold tenant does, to realise a thick-standing crop of Willow herbage, which he can either use green or dried, as any other herbage or hay is dried; and as for hedgerows, few plants can equal the Willow, for it will send up shoots from the stock six feet high in one season, and after the second year a fox-hunter could not cross the hedge of tall stakes; and I need scarcely add, that the overgrown Willows will yield two most important articles, namely, fuel and charcoal, the latter article being equally valuable to agriculture as to horticulture. The value of Gorse is already well known to agriculturists, therefore I will pass that over, merely remarking that the spines of the Gorse bush (and be it borne in mind that its leaves are all spines) and the wood of the current year are the eatable parts of that valuable fodder plant. Here, then, we have the farmer feeding his stock with the leaves and sticks. Again, we have the farmer feeding his stock with the leaves and stems of dried grasses and other plants, under the name of hay. Now, upon what principle can it be objected to, to feed stock upon that far more substantial and nourishing article, the leaves of trees?

The culture of trees and shrubs is altogether a higher order of tillage than the growing of annual crops, such as corn or Turnips; any cottager, even the mere clown, selfish and uneducated, will plant a Potato garden, when he may reap the fruits in three or four months; but it requires intellect of a superior order to plant a vineyard, where a man has to "cast his bread upon the waters," and wait so many days,—nay years,—for a return. Gardens and farms are made of the same earth, and, if a fruitful vineyard has been counted so great and so good an article as to be coveted and longed for by the wisest kings, surely a farm a hundred times more extensive would become an exceedingly interesting and desirable affair, if it were cultivated according to the present advanced state of British horticulture. I cannot help mentioning two notable examples of fruit-growing, to show what really can be done by first-rate gardeners, in the open air, with a little British earth. Mr. Plimley showed me the *Black Esperione* Grape, perfectly ripe, against a wall, in the plain earth of the forcing-garden at Kensington; and Lord Blantyre's gardener has ripened *Black Hamburgh* Grapes against a flued wall,

without glass, in Scotland, despite of wind and weather, by superior skill; the berries finely flavoured, and some three inches in circumference. I mention this to show the value of walls and shelter, and likewise as stubborn facts, to show that England could produce fruit to yield superior food and drink to her children by means which I hasten to explain. And the reason why I dwell upon and reiterate the subject of shelter is, that every gardener knows warmth to be one of the essential elements of superior culture; hence I know of no gardener worthy of the name that does not strain to shelter every crop. The finer species of crops, like the finer species of animals, are not to be cultivated without due regard to their shelter, as well as to their food. Hence the want of success with many farmers in exposed situations; for, whilst guano and other stimulants are given to the roots of the crops, the better part of the plant being above ground, is left to be broken, or chilled by the winds, for want of shelter; and thus fine, high, dry, healthy ground, the most pleasant and desirable for man or beast to live on, is *deserted* (that is the proper word to express it); for such is the inclemency of our weather, that neither animal nor vegetable can long endure the pelting of the storm, and retain their health; and, consequently, game and animals desert it, while delicate crops die, or suffer injury; but I have often marked the game leaving high ground, and finding shelter on ground still higher, where the strong wind was shorn of its power by the forest of Pine trees.

The want of shelter to the farm is at the present day a brand upon our agriculture, and when this desideratum is supplied, the farmer, studying his own interest only, will effectually provide both food and shelter for game without intending to do so. And, lest the agriculturist should imagine that trees are unprofitable, I must beg leave to state, that I agree with him entirely in this opinion, as long as he grows Thorns that require labour, and yield nothing but clippings. But Boc's opinion is of importance, as a botanist and as a historian, that horses endured hard work fed on the leaves and shoots of Willow. Cobbet speaks of a goat that was fed on paper, and yielding milk all the while; and recent experiments have proved that the fibre of lint may be made into linen, and after repeated washings and bleachings the old linen is torn into the finest shreds, and made into paper; yet, after all these manipulations, this pure fibre is found capable of yielding sugar. It is, therefore, evident, that substances hitherto considered unimportant, may be turned to great account, and among these I have the clearest evidence to show that the leaves and spray of trees are most important articles of food for farm stock; and although we have for many years practised the barking of the Oak whilst standing where it grew in May, in order to get the bark at the proper time, leaving the doomed tree to be felled at leisure, yet it seems to have been left to me to state the value of a standing tree, as yielding for fodder leaves and spray, which may be obtained without injuring the timber, by felling the tree just before the fall of the leaf.

The leaves and spray of trees, like the leaves and spray of Gorse, must be prepared by bruising, and, in some instances, by boiling or steaming, and may require to be mixed with other articles of food for the higher order of domestic animals; but it is clearly proved, from my own observation, that the goat has a stomach sufficiently strong to digest the leaves and spray of Oak and Fir trees, and to thrive well on them. My goat has greedily devoured the leaves, spray, and fruit, of the Mountain Ash, and seems to relish the spray and leaves of at least twenty species of trees that I have tried her with. In short, there are few trees that do not yield substances much more likely to be converted into sugar or food than pure vegetable fibre, in the form of an old linen shirt, or an old folio volume; therefore, trees or shrubs, planted as hedgerows or as shelter, may be made to yield fodder, as well as fence and shelter.

I purposely avoid speaking here of timber, as that belongs to a different department; and I come to the planting of the highways and hedges on the farm. Now, in order to show the construction of an evergreen hedge for shelter, I shall give a section of one (Fig. A.). The dyke, or bank, should be the frustum of a pyramid, and the plants, or scions, prepared as directed in the first part of this paper, should be placed in the bank,—not on it; for, although this hedge is designed to shelter other crops, it requires shelter in the first instance;

and it must be borne in mind, that it is almost impossible to get evergreens to thrive, even when they have good roots, in

Fig. A.

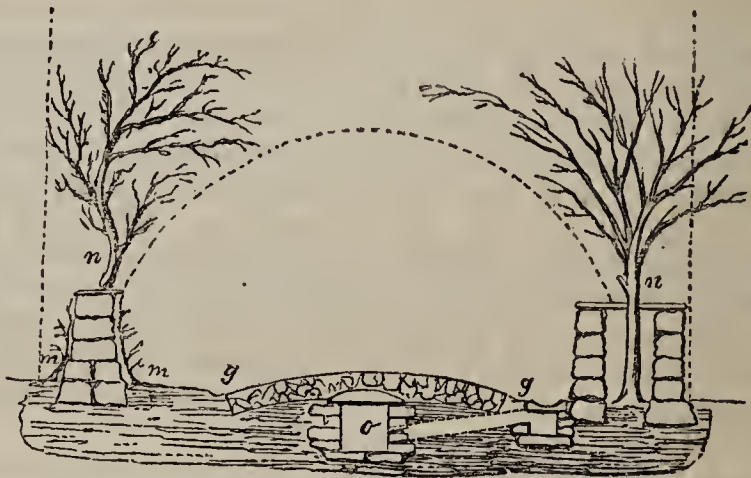


Demidyke and Evergreen Hedge for shelter, &c.

an exposed situation; therefore, I repeat the caution, that such material as branches of Gorse, or other brushwood, should be stuck in to shelter temporarily the young hedge. With this precaution, and careful planting to an earthen wall, success is certain, even on the face of Snowdon. The line on the top, or ridge, of the dyke requires to be sowed according to a process presently to be detailed. The above description of an evergreen hedge is intended only for bleak and exposed situations. Where the land is of little value, it is merely a screen, or band, to break the force of the prevailing winds.

Where the land is of great value, the fences should be built of some material that would not impoverish the soil: it is a grievous mistake to build a turf wall, because the materials thus taken reduce the productive powers of the soil. Stones form a first-rate article for fences, and in the section (Fig. B.),

Fig. B.



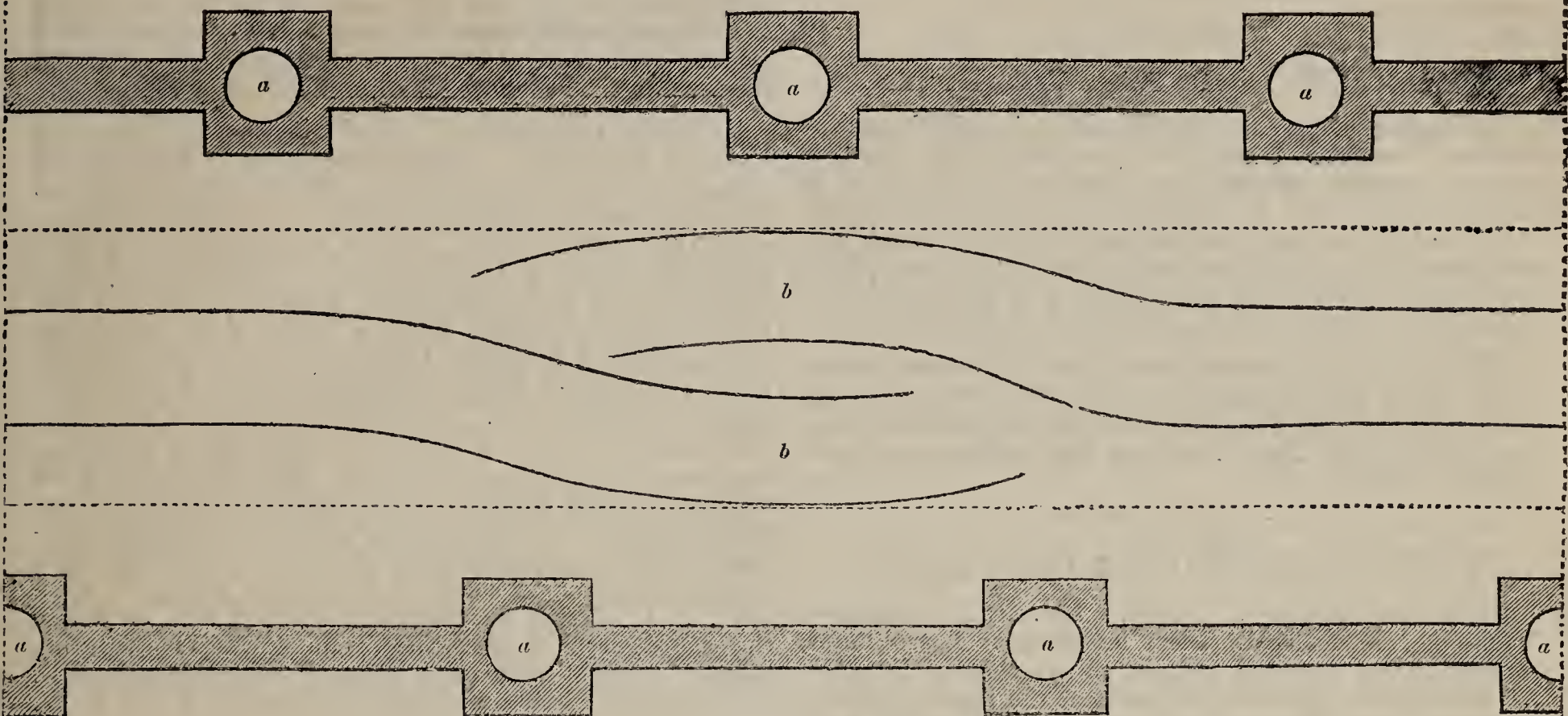
Section of Fruit Trees by a Farm-road side. *n*, Trees, as Cherries, Apples, &c. *m*, Gooseberries, &c. *o*, Drain. *g g*, Showing the stony part of the road.

which I have given of a farm-wall, it is represented as built of stone, and is taken from a sample of walls on the estate of Cluny, in Aberdeenshire; but the mud-wall, which is common in many counties in England, if it is built of clay, or other subsoil, and thatched, as we see it done near Exeter, will answer the purpose which I intend admirably; for it is not at all uncommon to see ripe Peaches against walls built of puddle. Hence, the introduction of such fruit-walls into localities where fruit is wanted, and where land produces only weeds, cannot be regarded by the most sceptical as an idle theory. In the year 1836, I employed much of my leisure time in collecting fruits, and all the information I could acquire respecting their habits, and, by the kindness of friends, I obtained many hundreds of specimens of Pears, Apples, and other fruits; and I must not, on this occasion, forget to mention, with many thanks, the great civility and valuable information received at the Society's Gardens at Chiswick, from Mr. Thompson, of the fruit department, who was always ready to identify the articles taken to him, thereby insuring the correctness of the remarks that might be made upon any variety as relating to that variety, and to no other. From specimens thus examined in the collections of the principal fruit gardens, in the immediate neighbourhood of London, I collected information which the late Mr. Loudon published in "Gard. Mag.," 1837, from which it appeared, that by a particular arrangement in the growing of fruit trees and fruit shrubs, from one-fourth to one-half of the ground of the garden might be cleared, and made available for other crops: for the walks and thoroughfares of the garden produce only weeds and mud; and by making these into fruit borders, and walking on a pavement and under a trellis, the clumsy plain crops

of the kitchen garden become so hid and disguised by the more prominent fruit trellises, as quite to alter the character of that department into that of the ornamental. I mention this as a precedent, and am glad to find, here and there, fruit

arches rising over walks in gardens, where never any were before 1837; and I would now creep one step further with such encouragement, and show what may be done in the field. The ground-plan (Fig. C.), and section (Fig. B.), drawn to

Fig. C.



Ground Plan of Farm Road and Walls, showing the tree guards. The section is taken on the line *c c*, and shown in Fig B; *a a a a a a*, Trees; *b b*, the Track of the Wheels of two Carts crossing, showing the width of the road wanted.

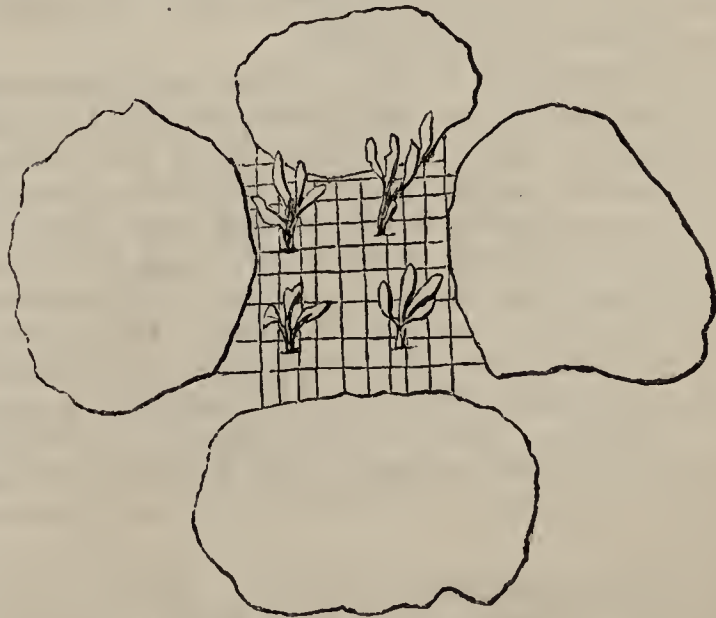
a scale of one inch to twelve feet, will explain my ideas of road-side trees. The tree-guards are made in the wall, thereby acting the parts of buttresses to strengthen it, and as wind-guards to shelter the shrubs (*m m*) that are planted against the wall. The dotted lines show an imaginary arch, twelve feet high, and an imaginary line on each side, beyond which the trees must not pass, as it is intended to grow them over the road, and not over the field.

There is really no end to the sinful waste of fine, healthy, open air and good soil, that is everywhere to be seen in the culture of land. I am of opinion that the waste in farming is much greater than the waste that I have shown to exist in gardening above referred to, and that, therefore, there is the means of growing fruit unemployed to the extent of one-fourth of the land of the whole kingdom; for example, the hundreds of miles of railways require only as much of the earth and air generally as the plan and section of one of their tunnels; and if the trellising of a railway were considered extravagant, surely the beautiful slopes could produce berries of many kinds: witness some already notched and planted with Strawberries. The dusty turnpike roads, the country roads, and the farm roads and lanes, the idle stone walls, and the worse than idle Thorn hedgerows, are all localities capable of producing fruit. The banks of brooks and rivers, the steep stony ground, where ordinary tillage is impossible, the edges and gaps of woodland, the square miles of open moor-land and eraggy-mountain-land, are all capable of producing shelter for game and plenty of fruit; witness the Bilberry, how it thrives when the Fir trees are thin on the hill-side, yet thick enough to break the force of the wind. I would not dwell so much on the value of shelter, were I not assured that, from the Vine to the vilest weed, no fruit, or seed, could possibly be produced without the halcyon days necessary to enable the blossom to perform its functions, and those days or hours must be serene.

But to return to the subject of game preserves. I may now, in conclusion, state, that the time to try game preserves is when the ground is covered with snow; then the value of such as the Cotoneaster and the like plants will be seen, which produce both food and shelter; and, by the method detailed

in the first part of this paper, gamekeepers and their assistants can now plant in summer, which is their leisure time, and sow game-cover; and, in order that they may see what can be done in this way in a short time, I will tell them, that in a clump of Gorse sown here, with Broom to nurse it, the Broom is now more than four feet high, in eighteen months, and the game have taken to it for first-rate shelter. This was a bleak spot two years ago, and was thrown in ridges, or demidykes, similar to Fig. A. Small seeds, such as those of the Fuchsia, the Rhododendron, &c., must not be sowed, or covered, in the ordinary way that cottagers sow their garden seeds, or they will never grow, from being buried too deep: the seeds should be sowed on the smooth top of a little hillock, and as much straw, or moss, laid over it as shall barely hide the soil, and on the ends of this straw, or moss, four stones should be laid (as in Fig. D.); these stones keep the top of

Fig. D.



Stones laid round a Patch or Clump of young Rhododendrons, &c.

the hillock moist, and shelter and guard the seedlings; and where Rhododendrons are planted out from seed-beds, the small plants should be surrounded with stones for the same

reasons. Game will rear themselves, and preserve themselves, better than gamekeepers can do, if they are furnished with such food and lodgings as I have proposed; and I look forward to a time when wine and game will be a part of the produce of an English farm, since it is quite as easy to rear partridges and pheasants as it is to rear geese and turkeys.—(*Horticultural Society's Journal*.)

HAIR-PINS FOR PEGGING DOWN.

IN speaking of pegs for bedding plants, in several numbers of *THE COTTAGE GARDENER*, you state, that hair-pins would be certainly the best pegs, but are too expensive. It may be useful to let you know, that I get hair pins in Birmingham by the pound,—at sixpence a pound,—which contains about thirty dozen good, strong pins. A little care, when the plants are taken up, will save many of these pins for a second year. No wooden peg will ever do again.—HANLEY.

[We have another communication, from S. Tattersall, on the same subject, and showing how to cast them with lead; but neither plans are so cheap as the hooks of galvanised wire, described at page 224. The song was received and much admired.—ED.]

NOTES ON NEW OR RARE PLANTS.

STYLIDIUM ARMERIA. *Labill.* Nat. ord., *Stylidiaceæ*. Native of New Holland. Plant herbaceous. Leaves linear, straight, acute, smooth; margin entire, slightly incurved. Scape smooth at the base; becoming at the apex pilose with glandular hairs. Racemes somewhat spiked, simple, bracteate. Calyx tubular, oblong, round, with the limb divided into two dentate lips. Corolla monopetalous. Tube longer than the calyx. Limb divided into five irregular segments; four large, equal, spreading; the fifth small, deflexed, thickened, bearing two erect, dark-coloured appendages at the base. Anthers and stigma supported on the apex of a single column, the latter lying in a cavity between the former.

This plant presents a singular anomaly, to almost every thing else in the vegetable kingdom, in the structure of its flowers. It is in the column supporting the anthers and stigma, and these latter organs, that the singularity exists. The column, which is highly irritable, hangs down on one side, over the small division of the limb of the corolla, until touched, when it instantly springs up and falls to the opposite side. And there is such a union of the anthers and stigma, as is only to be found in the family of Orchids. In addition to its structural interest, it has no small claim on the score of beauty, and is, therefore, highly worthy of cultivation in private collections. Its blooming period is June; the flowers are beautiful purplish rose, and a lasting succession is kept up. Turfy loam and peat, with a little sand, seem to suit it very well. The protection of a cool frame is all it requires for the winter; in summer it may be cultivated in a shady place out of doors, or in an airy greenhouse. Propagated by division, in autumn or early spring.

ACACIA DENTIFERA. *Benth.* Nat. ord., *Leguminosæ*. Native of the Swan River, and introduced into this country by Drummond. Habit moderately tall, loose, drooping. Branches slender, angled, smooth. Phyllodia long, linear, lanceolate, acutely mucronate, attenuated at the base, falcate, thin, dark green. Inflorescence in very long, loose racemes. Heads of flower large, numerous, globose; bright yellow.

A fine and distinct species of *Acaëia*. Handsome specimens are rare; yet the plant seems capable, with proper care when young, of being all that can be desired in a specimen plant. It produces seeds very sparingly; but good plants may be procured from cuttings of the stronger roots, put in bottom heat in spring; they should not be kept too close or too hot.

MARIANTHUS CÆRULEO-PUNCTATUS. *Link.* Nat. ord., *Pilosporaceæ*. Native of the Swan River. Introduced by Mr. Morison. Branches slender, twining, pubescent. Leaves alternate, on very short petioles, acutely lanceolate; margin acutely serrate; clothed with silvery partially deciduous hairs. Inflorescence corymbose. Calyx divided into five

subulate segments; pilose. Corolla of five oblong, acute petals; irregular; the two upper the smallest, gradually gliding into long claws; beautiful azure blue, spotted with white.

A pretty little greenhouse plant, meriting a place in a choice collection. As it is very impatient of wet at the roots, it should have every care bestowed on the drainage and watering, at all times. Light loam, fibry peat, and sand in plenty, and as gritty as possible, form the most suitable compost. Propagated by cuttings in spring, in slight bottom heat, and in the usual method employed for greenhouse plants.

SOLANUM JASMINOIDES. *Paxt.* Nat. ord., *Solanaceæ*. Native of Rio Grande. Probably introduced by Tweedie, who collected extensively in that country. Stem branching copiously. Branches slender, climbing, glabrous, obscurely angular. Leaves alternate, petiolate, smooth, cordate, entire, or with two small auricles at the base, acute. Inflorescence cymose. Peduncle about an inch in length, produced opposite a leaf, smooth, wiry. Pedicels half the length of the peduncles, also smooth but flexuose. Calyx divided into five smooth, acute, ovate teeth. Corolla campanulate, with a short tube, contracted at the base. Limb divided into five ovate segments; each lobe with a central rib; pure white; wrinkled.

A beautiful, climbing, wall shrub. Perfectly hardy in the neighbourhood of London; but not likely to stand the winters of the north with impunity, when unprotected. It flowers profusely in June. A sunny situation, with a moderately light, but rich soil, are necessary to develop its beauty to satisfaction. It is easily propagated by cuttings, and, as it also ripens seeds in the open air, there is no difficulty in procuring plants. It ought to be more generally cultivated than it is, for we do not possess a more handsome wall shrub.—S. G. W.

PROGRESS OF THE PITCAIRN ISLANDERS.

Few among our readers but have either heard, or read, of the mutiny of the crew of the *Bounty*, during her voyage for plants of the Bread Fruit tree; and of the discovery, after many years, of John Adams, the last of the mutineers and his descendants, on Pitcairn's Island. That mutiny occurred in 1787, and this discovery of the remnant of the mutineers, was in 1814. Gladdening was it to find that Adams had implanted in the island colony a life-influencing knowledge of Christianity, as well as of the European arts of civilised life.

Time wore away, and many years had elapsed, when, in 1825, another ship-of-war again approached Pitcairn. Her officers found the good work still prospering, and love and harmony pervading the little community. Upon landing and retiring to rest, the evening hymn, chanted by the islanders, soothed their slumbers; and at dawn of day they were awake by the strains of the morning hymn. On the Lord's day, again, equally pleasing signs presented themselves. The little community crowded their humble sanctuary, no work of any kind being permitted to take place. Great devotion was apparent in every individual; and even among the children there was a seriousness unknown in the younger part of our communities at home. A sermon was delivered; but here, we fear, the inhabitants of Pitcairn will find few European admirers or imitators. *It was read over three times*, lest any part of it should be forgotten. "The service," observes a spectator, "was very long; but the neat and cleanly appearance of the congregation, the devotion that animated every countenance, and the innocence and simplicity of the little children, prevented the attendance from becoming wearisome." With respect to Adams himself, the same narrator states that, from close observation, he had no doubt of the sincerity of his piety. Adams was on board the vessel that had arrived from England, for two or three days, and slept in the captain's cabin: but he would never get into bed till the captain had got into his and was supposed to be asleep, when, in a retired corner of the cabin, he fell on his knees and performed his devotions; and he was always up first in the morning for the same purpose.

"All that remains to be said," concludes this writer, "of these excellent people, is, that they appear to live together in perfect harmony and contentment; to be virtuous, religious, cheerful, and hospitable beyond the limits of prudence; to be patterns of conjugal and parental affection, and to have no

vices. We remained with them many days, and their unreserved manner gave us the fullest opportunity of becoming acquainted with any faults they might have possessed."

In 1829, forty years after the mutiny of the *Bounty*, John Adams died, full of years and full of honours. The excellency of the latter part of his life had thrown into the shade the stains of its opening; while the vices by which his earlier years were stamped, made only more distinguishing and glorious the grace of that Saviour who had wrought such transforming effects in his life and character.

When rather more than another quarter of a century had elapsed, a further great change took place in the history of these islanders, and we will now let Sir William Denison, the present Governor of New South Wales, relate the sequel:—

"The accounts which were received from Pitcairn Island, during the latter period of their residence there, showed that the available land was not adequate to the maintenance of the increasing population; and, as it was known that the British Government had determined to break up the convict establishment at Norfolk Island, several persons, interested in the welfare of the Pitcairn Islanders, applied to the Government to permit these people to settle on a spot which would, with common industry, furnish ample means of maintaining them for many years to come.

"Reference was made to me on this subject, and I was directed to suggest the arrangements which it would be desirable to make, not only for the transference of the people from their old residence to Norfolk Island, but also for their maintenance and accommodation, until they could place themselves in a position to provide for themselves. After some delay, all these arrangements were perfected; and a vessel was chartered to bring down the whole of the Pitcairn Islanders, who, in spite of some demur on the part of a few, finally decided to move in a body to their new home; and 194 souls were landed at Norfolk Island in June, 1856. The same vessel carried off the last remnant of the convict establishment to Tasmania; and the island was then handed over to its present possessors, with an amount of stock, implements, tools, buildings, &c., which must have contrasted most strongly with their former poverty. The following statement will give you some idea of the favourable position in which the new settlers were placed:—In the first place, every family was provided with a convenient residence, generally well built of stone. Provisions, sufficient to last till they could gather their first crop, were furnished, as well as seeds of various kinds. Clothing, too, was forwarded. All these articles were deposited in well-built dry stores on the island, in readiness for them on their arrival. Then, on the island itself, the convict department left for the use of the new comers 1100 sheep, 450 head of cattle, several horses, pigs, poultry, &c.; agricultural implements, carts and drays, harness, tools of all sorts for the different trades, together with all the appliances required. In fact, everything was provided to meet the wants and wishes of the people; the only mistake made, if indeed it can be fairly called a mistake, being that too much was handed over to a community whose wants hitherto had been ministered to with a very sparing hand.

"I received in October, 1856, a despatch from the Secretary of State, containing the Order in Council, constituting Norfolk Island an establishment separate from the adjacent colonies, and a commission appointing me, as Governor of New South Wales, to be Governor of Norfolk Island. Instructions were also issued to me, for my general guidance in the exercise of the large powers necessarily vested in me; the spirit of the instructions being, that the people were to be interfered with as little as possible, and that their present social system was to be maintained. I was in hopes of being able to pay a visit to the island at an earlier period of the residence of the present inhabitants; but circumstances prevented this, and it was not till lately that I was in a position to run down to the island, to make myself personally acquainted with the people, and to exercise those powers of enactment of laws, and of appointment of magistrates for their administration, with which I had been invested by Her Majesty. The delay has been rather an advantage than otherwise. It has enabled the people to arrange their own matters according to the best of their own knowledge and ability; and the deficiencies exhibited have enabled me to form a more correct idea than I could have done, had I visited them sooner, of the character

and amount of assistance and instruction which it may be advisable to afford to them.

"Having sailed from Sydney on the 17th September, we made the island early on the morning of the 23rd. The surf was too heavy to allow a boat to land at the settlement; we, therefore, stood round the island, and I landed at the northern end of the island, at a spot called the Cascades, when I was met by the chaplain, the Rev. G. Nobbs; the chief magistrate, Mr. F. Young; and a large proportion of the adult inhabitants. Having walked across the island to the settlement, a distance of about three miles, along a very good road, I took up my quarters at the house of the former commandant, which had been reserved as a government house. The furniture, however, with the exception of a few tables and chairs, had been removed; and I was obliged, for the first night, to trespass upon the kindness of the inhabitants for many matters conducive to my comfort. On the next day, I called the inhabitants together in the school-room, and read my commission to them—explaining at the same time the objects which I conceived the Government had in view in establishing them on the island; which objects were, in the first place, their well-being and comfort, and in the second, the perpetuation, so far as circumstances would admit, of their existing social polity.

"Norfolk Island is estimated to contain about 10,000 acres. The land rises boldly from the sea on every side, to the height of from 300 to 400 feet; and this may be looked upon as the average elevation of the interior plateau. To the north-eastward the ground rises in a single hill, called Mount Pitt, to the height of upwards of 1000 feet. While, however, the general level of the island may be taken as above stated, this level is broken up by gullies and watercourses, with sides sloping steeply though not abruptly, which carry off the drainage of the surface; discharging themselves into the sea at three or four points along the coast. Two of these watercourses open out, in the immediate vicinity of the settlement, at the south side of the island, and it is probably owing to the action of the water brought down by them that there is, at that particular spot, a narrow level space between the base of the hills and the sea, upon which the principal convict establishments were constructed; these streams bring down a steady, though but moderate, supply of water during all seasons. The soil throughout the island is of the richest description, being formed of decomposed basalt: even on the sides of the gullies, and on the table land, every thing appears to grow most freely, while in the bottom of these gullies, where there is more moisture, the vegetation is rank and luxuriant. The Norfolk Island Pine (*Altrigia excelsa*) is the principal timber tree of the island; it grows everywhere, on the hill sides, on the table land, or on the edge of the cliff exposed to the sea blast, rising to the height of 200 feet and upwards, and attaining a circumference of upwards of thirty feet. I measured one myself, which, at five feet from the ground, was twenty-eight feet six inches in girth. There are several other trees, some of which grow to a middling size, but none to compare to the Pine. The under-brush of the forest is composed of a great extent of Lemon and Guava; the fruit of the former contrasting beautifully with the dark green of its foliage. While Nature has been thus bountiful in her gifts, Art has also done much towards rendering the island a most inviting residence; for though the labour of the former inhabitants was compulsory, yet, as it was well directed, the whole island has shared in the benefits arising from it. Roads lead from the settlement in every direction; these are well laid out, thoroughly drained, and, in many instances, carefully macadamised. Bridges have been built over all the gullies crossed by the roads; and even where it became necessary to cross the side drains, in order to get across to the enclosures, stone culverts were made, through which the drainage passed: the result of this care in making the roads has been that they remain in a very good state, though no care has been bestowed upon them for the last four or five years. A large portion of the table land of the island has been thoroughly cleared of timber, divided into paddocks, fenced, and brought under cultivation; the fences, being of timber, have very generally yielded to the destructive agency of the weather, but the paddocks are covered with a thick sward of grass. Farm buildings on an extensive scale have been erected on different spots, some of which are solidly constructed of stone, and, with common attention, will remain available for centuries.

"One of the watercourses which discharges itself at the settlement has been dammed up for the purpose of forming a mill-pond; and a water-mill has been erected with all the machinery required to grind corn. A windmill also has been erected on a point of land near the sea, where it has the full benefit of the breeze; so that in case of accident to the dam, or to the machinery of the water-mill, or to a failure of the water in the dry season, the means of preparing flour from grain would be still available. At different points of the island gardens were formed, in which every species of fruit and vegetables which would endure the climate was cultivated; and these gardens and the fruit trees which were planted in them still remain, though the rank luxuriance of some of the plants, both native and imported, has changed the aspect of the garden into that of the wilderness. Bananas, Yams, and Sweet Potatoes, are intertropical plants, but they flourish on the island; in the warm valleys the Orange and all the plants allied to it appear to thrive. Coffee of the best quality is produced; arrowroot was extensively cultivated. Maize grows very well, and produces a heavy crop. Rye also yields a fair return; but the climate is not favourable to wheat; neither can the produce of the common Potato be reckoned on. From what has been said, it would seem that Norfolk Island offers advantages to settlers of a character not often met with. There are, however, some natural disadvantages. In the first place, the anchorage off the island is bad—the water being deep, and the ground foul; so that anchor and cables are frequently lost. There is also but little shelter from a gale; from whatever quarter it may blow. In the second place, the island is not within the track of vessels navigating these seas; and it must, therefore, for many years, be dependent upon chance whalers, upon an occasional visit from a man-of-war, or from a small vessel from Sydney or Auckland, for the means of communicating with the rest of the world.

"The actual distance from Sydney is about 900 miles, and from Auckland about 600 miles; the time of making the run from Sydney to and from the island may, on an average, be taken at sixteen days; and from Auckland from twelve to fourteen days."

BLOOMING OF AILANTHUS GLANDULOSA.

As I understand it is of rare occurrence to see the *Ailanthus glandulosa* bloom in this country, I thought it would be well to make known to those interested in such matters, through the medium of your valuable columns, that we have two fine plants of it in bloom at the present time (July 5th), both of which bloomed and fruited last season.—ARTHUR LEARY, *Spring Grove, Richmond, Surrey.*

[Trees of the *Ailanthus*, under thirty years of age, hardly ever flower in England, and it is a rare occurrence to see old trees of it in bloom. White Knights is the only place where Loudon could learn that it ripened its fruit, which is similar to that of the Ash, but smaller. Such notices are very interesting.]

SWARMS LEAVING HIVES.

A COMMON notion prevails, that when swarms leave the hives in which they were placed in the usual way, without any apparent cause, the bees have a dislike to them, either from bad smells, or something else difficult to explain. I have known them, however, to do so, even from hives in which fresh swarms at other times would have readily settled; which shows that the fault sometimes rests with the bees. The fact is, in such cases, that the bees have other plans in view beforehand, where a part of them may have been for days getting ready, and are waiting for the queens to join them with the whole colonies. This is of such common occurrence, that I need not dwell upon it. But there are two things connected with the flight of bees, which I may notice, namely, that swarms sometimes fly off at once to cavities without resting, while at others they cluster repeatedly on branches during their flight. The weakness of the queens may account for their resting; and in such cases, when the swarms are caught or lived, they certainly will not stop, however sweet the hives may be, owing to their previous knowledge of the places of their own choosing, already noticed. But, in general,

it is only first swarms that act thus; after ones seem to leave the stocks in a more hurried manner. The rivalry of the young queens may account for this; also for their often leaving the stocks with a mere handful of bees.

I may have noticed elsewhere, that this propensity of bees, to break off into small colonies, is a great drawback to keeping them successfully in our variable climate. However, as regards dislike of swarms to hives, some kinds, of course, are more suitable to the habits of these insects than others; but at swarming time they will occupy any sort of dry cavity, and even make combs on a branch in the open air.—J. WIGHTON.

QUERIES AND ANSWERS.

CUTTINGS OF PELARGONIUMS, GERANIUMS, FUCHSIAS, AND OTHER BEDDING-OUT PLANTS.

"I HAVE a good selection of Pelargoniums, Fuchsias, Scarlet Geraniums, and such like, for bedding-out, and wish to know in what way I can best keep them through the winter, having no convenience but my window and a cold frame. Would it be better for me to strike cuttings now than in spring?"—PETER.

[All Geraniums, of the Scarlet or *Horseshoe* class, are best to be propagated in the autumn, the earlier the better. All greenhouse Pelargoniums, which will bed, are best from spring cuttings; all bedding Calceolarias are better struck late in the autumn; all bedding Fuchsias ought to be left in the beds, to be cut down, and well secured from frost, if they need it; and, in such cases as yours, all the rest are easier, and more economical, to be struck in the spring. But see what Mr. Beaton says to-day on the subject, which is one of the very highest importance to all of us.]

MANAGEMENT OF DELPHINIUM FORMOSUM AND LINUM RUBRUM.—PINCUSHION BEDS.

"Are *Delphiniums* (*formosum*) better for being renewed with seedling plants yearly, or should the old ones be kept in their beds, with a top dressing, in spring or autumn?"

"Will *Linum rubrum* peg down? I find plants die off this year like Pansies.

"*Sedum acre* makes very neat, pretty edges for pincushion beds. Is there any other hardy plant, to match in style of growth?"

"Instead of bricks, I have close wickerwork for my pincushion beds: they answer well, last three seasons, and with care even longer. I also use large shallow hampers, on low blocks of wood, for garden plants. I have one now, with *Ivy-leaf* Geranium hanging over the sides, which will touch the ground soon; *Lobelia erinus* close round the inside of the Geranium, which ought to be the *Cerise*; and pets from the greenhouse in the centre. These hampers do not cost more than 2s. 6d., are very strong, and only require to be lined with moss before putting the soil in. The plants grow very quickly, from the drainage being so good. Of course water is required every other day, as this hamper must not be more than eight inches deep. About thirty-two inches diameter I find a good size. They last three or four seasons, by being put under cover in winter, and, no doubt, much longer, if painted or varnished."—KATE.

[The second, third, and fourth year, after sowing the seeds, *Delphinium formosum* is in the prime of life, for the flower garden and ordinary beds. It wants no top dressing at all, and is much better without it, except mulching, which is good for most plants. After the 4th year, all these *Delphiniums* ought to be taken up, at the end of February, to be parted at the roots into comfortable pieces, neither very large nor very small; the practice to be continued every second or third year. It is best to have moderately small plants, and to plant them not more than six or eight inches apart; and never to allow them to ripen a single seed in a bed, but rather to cut off the strongest flower-spikes, when they are three-parts bloomed, and use the fourth-part of the bloom for glasses in-doors.

Linum rubrum will peg down and do well, but would do better standing, and to be supported with a few *slender branched sticks*.

There is not a plant in the country which would match *Sedum acre* in an edging; it is one of the best edging plants in the world, for towns and cities, and would grow in St. Paul's Churchyard, London, just as well as on Epsom Downs; but the golden form of it, in winter, is by far the prettiest.

Your own plans and contrivances are most excellent, and Lady Grenville is the patroness of all such contrivances.]

PRESERVING THE BROOD WHEN BEES ARE DESTROYED.

"In No. 503 of THE COTTAGE GARDENER, for May the 18th, 1858, your worthy contributor, 'P. V. M. F.,' writes thus, when speaking of brood or young bees unhatched. 'By burning the hives in July, or very early in August, most of these, if carefully preserved, will live till the following spring.'

"Now, I wish to know how, or by what means, the young brood unhatched, can 'be carefully preserved,' so as to live the following spring?"—CERCO.

[I am vexed to have been so long without answering your correspondent "Cercos" inquiry, touching my meaning. When I speak of a "carefully preserved" bee brood living "till the following spring," I simply mean, that if the young brood, which is usually destroyed in early autumn by the burning process, were but suffered to be hatched out by the bees of some other hive, the young bees so preserved would add materially to the strength and prosperity of that hive.—B. & W.]

EXTIRPATING THE MEALY BUG.

"Will you inform me the correct names of the enclosed three Orchids? Also, what is the best work on the cultivation of Orchids? I have "William's Manual," but I want something more modern and *more in detail*. Also, would it be possible to name a list of plants for a stove not liable to take the mealy bug? I have spent two hours, this morning, clearing a *Stephanotis*, from which I cleared every bug I could discover, not two weeks since. As an amateur not having much time on my hands, this insect quite beats me out, and discourages me. It does not attack my *Allamanda Schottii*, and *cathartica*, or *Thyrsacanthus rutilans*, and I think these are the only ones that escape; but it bids fair to kill the *Stephanotis*, *Dipladenias* and *Ixoras*."—AN OLD SUBSCRIBER.

[Your Orchids are:—1. *Stanhopea oculata*. 2. *Epidendrum cochleatum*. 3. *E. fragrans* alias *radiatum*. William's is the best work we know of for Orchids; but the best practical treatment, of the whole subject, will be found in Mr. Appleby's treatise, in the pages of THE COTTAGE GARDENER. Every kind of stove plant is liable to the mealy bug, and once it gets established in a house, all the powers on earth, or under it, cannot completely get rid of it. The best mode is to make cuttings of young shoots, not yet infested; to rear the young plants a whole summer, in a dung frame or pit,—such as a Cucumber pit; to remove all the stove plants at the end of August; and to wash, clean, and paint, every inch of wood, stone, brick, brass, and iron, and all other things inside; and not to introduce another plant until it is proved to be free from bug or scale in some other house for three summer months. Nothing short of this very process will ever rid you of bugs; by it, the best gardeners find no difficulty in keeping their stoves free of it. Each of the nostrums, for getting rid of scale and bugs, is a *hum*, with the name of the insect at the end.]

A PRECOCIOUS CUTTLE.—I was much amused with the perfect self-possession of the first that was hatched in my presence. It had not been free from the egg-shell for one minute before it began a leisurely tour of the vessel in which it first saw the light, examining it on all sides, as if to find out what kind of a place the world was, after all. It then rose and sank many times in succession over different spots, and, after balancing itself for a moment or two over one especial patch of sand, blew out a round hole in the sand, into which it lowered itself, and there lay quite at its ease. It executed this movement with as much address as if it had practised the art for twenty years.—(*The Common Objects of the Sea-shore*.)

GROUPING TREES IN PARKS.

A PARK without trees has as cold and dreary a character, almost, as a wild heath or barren moor: hence, all landscape gardeners plant that part of the domain, more or less, with trees, either single, in groups, or in clumps. A large single tree is an object that has, from all ages, been regarded by mankind with admiration,—from its grandeur, its beauty, and its usefulness. Hence, in all ages, man has either allowed a few of the wild denizens of the forests (which he has cleared away for farming purposes) to remain, to shelter and ornament his dwelling; or, if none were there, he has planted some for the same purpose. If this admiration and use of trees was practised by the ancients, it is still more so now. But, alas! a tree does not grow so as to be effective as a beautiful object for almost half a century: hence, it is desirable, in order to produce effect more speedily, to plant trees in groups, and shelter them from cattle, till they have grown so tall as to be out of their reach. A group may consist of only a couple of trees, or the number may be extended to half-a-dozen, or even nine trees, all of which may be arranged in different forms, so that each may have a different character. To attain this requires considerable knowledge and skill, and a prophetic eye as to different combinations of figure and kinds of trees necessary to produce a desired character in the scene. The greatest beauty of a group of trees, as far as respects their stems, is the different forms they take as they grow into trees. Some, for instance, grow quite upright, if ever so close together; others take a slanting direction; whilst, in some groups, one tree will grow quite upright, and its neighbour will push out in an almost horizontal position. These different arrangements, or appearances, may be attained in various ways, by planting in different distances from each other. I have often obtained a very pretty group by planting two or three trees in one hole, and allowing them to grow naturally, just as they pleased.

Great diversity of character may be given to groups of trees, and the greater the number (within bounds) of trees, the greater variety of position, and, consequently, character may be attained. The grand object of group-planting, however, is the connecting them together in various views, and, at the same time, to leave a sufficient breadth of the grassy part of the park open for grazing. Groups should always be connected in the distance with the wood, forest, or belt, but should never be planted in the deep sinuosities of the margin of such a mass of trees: they should rather be placed near to the projecting swells, and by that position they will seem, in different views of them, to form a part of, and increase the depth of, the wood or belt. In such a position, a single tree should be planted beyond the group into the park, to still more increase that character. Single trees, in general, are very objectionable. It has been, I am sorry to say, a very common practice, by many planters, to introduce into park scenery a great number of these single trees, with a view of effecting a character which can only be obtained by grouping. I once saw, in Hampshire, an example on a large scale of this dotting with single trees. Nay, the planter was not content with planting the trees (Oaks) singly, and at equal distances, but he actually planted every one of them on large hillocks, three or four feet above the surface. The insipidity and absurdity of this dotting arrangement was absolutely sickening. How different nature arranges the group, the glade, and the thicket, every lover of rural or forest scenery is aware of. Let such formalists go to the wild forest, or even look at groups of trees in such places as Chatsworth, Fawsley Park, Hooton

Loo, or Hatfield, and many other places where groups of noble trees abound, and let them study and reflect whether such sprinkling and dotting trees will ever produce such fine effects.

The kinds of trees for grouping depend much upon the soil and situation. In high, dry soils, the Scotch Fir, the Beech, the Birch, the Mountain Elm, and the Mountain Ash, may be used with every prospect of success. In lower elevations, the Oak and the Ash, with some of the Pinus tribe, form fine groups.

In planting them, I would advise each group to be of one kind, or very nearly so. An outside tree of a large group may be of a different sort, to give variety; and that outside tree should be next to an adjoining group of the same kind, which would give the idea that it had straggled from it. Some groups should have the tallest trees in the centre, and the outside, or points, should be lower, and branched to the ground. Other groups, by way of diverse character, should have the centre the lowest, so as to appear like two groups united by low trees. In fact, the great aim of the planter should be, to have every group of as different character as possible from its neighbour. I never saw, in old parks or wild forest lands, two groups alike.

The undulations of the ground, in the park, will generally give the planter opportunities of placing his groups in good positions. The tongue of a piece of elevated ground is a good position for a group, or on the side of a rising ground will answer for one or more admirably, especially if there is a mass of wood on the top; only avoid all formality, not only in the number of trees in each group, but also the distance from each other, and the masses of which they are to seem a part in various points of view.

T. APPLEBY.

LARGE SPECIMENS OF THE PINUS — CAMELLIA IN OPEN GROUND.

It is certainly much to be regretted that the public taste, which at one time was directed to the formation of an arboretum, should have abandoned that pursuit for one of its branches—the Pinetum. The late Mr. Loudon, who was a strong advocate for everything connected with arboriculture, certainly never expected, that the interest his labours created, in behalf of noble and important trees, would all subside into one channel—the culture of the Pinus. True, there is great demand for new and ornamental shrubs—both evergreen and deciduous; but large trees are mostly neglected, and Pines are the order of the day. Now, it is far from my purpose to detract from the noble appearance some of these species have; on the contrary, I meant to describe some fine specimens I fell in with not long since, at a place, I believe, but little frequented of late years by lovers of such things, but which, in times long since gone by, had its share of public attention, and, to all appearance deserved much commendation.

At a short distance from the pretty little village of Brusehley, and but a very few miles from the fashionable watering-place, Tunbridge Wells, a gentleman formed a collection of the Pinus and other things many years ago, following the impetus of an ardent admiration of everything that was ornamental in the vegetable world. His connections and acquisitions multiplied, until, like many other collections of a like nature, it merged into a nursery: and, I believe, the first large importation of French Roses found their way here, and were successfully cultivated for many years, until advanced years, and other causes, induced the worthy and enthusiastic proprietor to cease cultivating this queen of flowers for sale, as well as the other things for which his ground was remarkable.

But, contemporaneously with the Rose, the Pinus was also attended to with sedulous care; and each new species was added to the collection as soon as it could be got hold of. Doubtless, many of these were parted with, to the various collections which were forming at the time. But the worthy proprietor here kept some, from which, no doubt, he afterwards derived much pleasure, by witnessing the fine features they presented, and, probably, no small share of honest pride, by knowing that neither prince nor peer could excel him in some of his specimen trees. Years rolled on, and the trees, which at one time were nursed so carefully in tiny flower-pots, crept upwards by degrees, and eventually showed symptoms of competing with the native specimens, for healthy vigour, size, and the other points which constitute a good tree. In the meantime, the worthy and enthusiastic cultivator was gathered to his fathers, and, the paternal care with which he guarded his favourites being gone, it was determined to offer the collection for sale, which has been carried into effect. But my purpose is not to dilate on this subject, but merely to describe the features of some of the specimens as they stood on the ground: and those having trees of the same kind elsewhere, will be able to compare them with those here given.

PICEA NOBILIS.—About twenty-five feet high, as straight as a Spruce Fir, and well clothed all the way up. This is, certainly, the finest tree of the kind I ever saw; its rich glaucous hue gave it a pleasing appearance against *Pinus insignis*, and other kinds which were near it.

PICEA CEPHALONICA.—About twenty feet high, with a fine, rapid-growing leader. This species seems to be more dense in habit, near the ground, than it is higher up. This plant, however, shows that it is not the squat, low, thickset tree, we often see it in other places, but promising to be as tall as a Silver Fir.

PICEA PINSAPO.—About sixteen feet high; somewhat like the last in feature and general character.

CUPRESSUS SEMPERVIRENS.—About thirty feet high. Tall, upright, and not top heavy, as often seen.

ABIES DOUGLASII.—About forty feet high, and from forty to fifty feet in diameter, a splendid specimen; bearing cones in abundance, from which numerous plants have been raised. This was, certainly, the most remarkable plant in the place, its principal branches being carried out nearly at right angles to the stem; but the branchlets from these gracefully reclined on each side, not like the Silver Fir, which presents boughs perfectly flat, or nearly so. Many of these limbs were clothed with foliage of the deepest green, nearly to the centre, and the limbs were not so thickly planted on the tree as to hide their shape. Altogether, this is a most interesting tree, unlike any other that I am acquainted with, and, at this place, seemed to grow as rapidly as any tree ought to do. There were many other fine specimens of *A. Douglasii*, but none of them so large as the one described.

PINUS EXCELSA.—About twenty-five feet high. This was very good, but the size is not remarkable, and I do not think the situation exactly suited it. I mention this here, as many errors are made by planting this class of plants indiscriminately on the same spot.

PINUS INSIGNIS.—About forty feet high, densely clothed to the ground; foliage of a rich green, and branches much inclined to turn upwards. This is not larger than specimens of this kind are often met with,—one here being quite as large,—but it is a fine tree, and deserving of general cultivation; and the number of trees that were growing around it, of all ages, showed how well they were adapted to the soil and situation.

ARAUCARIA IMBRICATA.—About thirty feet high, and straight as an arrow; and how many more thirty feet

it will continue to ascend, seems impossible to say. Certainly the tree is in excellent health, and though well and regularly clothed all the way up with branches, it is not unwieldy, the habit being more sprightly and tapering than dense. This fine tree is about being removed some miles, and it is to be hoped it will flourish as well in its new abode as in its present one.

ARAUCARIA CUNNINGHAMII.—About fifteen feet high. This slow-growing plant is seldom seen in a healthy condition. This one, however, looks pretty well; still, at the best, it is not at home, out of doors, anywhere in this country. I believe it is sometimes called *Cunninghamia lanceolata*.

In mentioning the above, it is proper to describe the situation they are growing in, as well as the soil. The latter is, certainly, not the one to look at, that would invite farmers, in many districts, as being likely to be a fertile one. A pale-coloured, fine, sandy loam, resting on sandstone, and containing more moisture in its composition than most soils. In fact, it was this abundance of moisture that caused the plants to grow so well, especially the *Picea* section, and also *Abies Douglasii*; while, on the other hand, the *Deodars* were not remarkable, and the Cedars of Lebanon were not quite at home; and, as a proof that any situation does not suit all kinds alike, I may remark, that, at the place I write from, there are *Deodars* much more healthy and vigorous than any I saw at Bruschley; some other species, also, seem to thrive quite as well with us, yet we cannot compete with them in the *Picea* section, and the noble Douglas Pine. There may also be a something in the situations which it will be difficult to account for, as in altitude we must be pretty near equal; but several plants seemed to stand the winter, at Bruschley, that I have not noticed to do so well elsewhere. *Pinus excelsa* seemed to thrive as well as any, and even the Mexican Spruce, *P. Montezumæ*, did not look as if it had ever suffered from the cold; but *Picea Webbianæ*, one of the most handsome of the Silver Firs, occasionally loses its leader, as it does elsewhere.

I cannot close these remarks, without a notice of a fine specimen of the double white *Camellia*, which has been growing out of doors there for many years. In the catalogue it was described as twelve feet high, the same in width, and 3000 bloom-buds upon it. Whether all these points be exactly correct, or not, it is not necessary here to say; but it would be difficult to imagine a finer plant anywhere: it is compact and dense in foliage, and every tip set with a cluster of from four to eight or ten buds, the most forward of which was on the point of bursting. This fine plant, I was told, had braved upwards of thirty winters unprotected, and looked as if it might survive several centuries where it then was. It was growing on a lawn, apart from any other plants; but other detached shrubs, scattered about, might protect it a little. I have seen healthy plants of *Camellias*—against walls, and now and then one partially so—in the open ground, but this is certainly the finest I ever saw anywhere. The situation, it is necessary to say, was a slightly elevated one. The surrounding country partaking of that undulating character so often met with. Oaks and some other trees thrive well, while Apple and other fruit trees were hopelessly covered with moss, which was said to be owing to the superabundant moisture.

To the tourist, who may happen to visit the rural village of Bruschley, the clipped Yews in the churchyard will be interesting. These are arranged in pairs, by the side of the principal entrance, and are all alike in shape and height, the latter being about 30 feet or more, the stem of the trees being naked for six or eight feet from the ground, when the heads spread out uniformly all around, and are clipped with mathe-

matical precision into a conical shape, the largest diameter being, I should think, about eight feet; but so repeated has been this clipping, that it looks as if a small bird could not find its way inside anywhere. Altogether, I should say they are unrivalled for symmetry; there are five or six pairs of these venerable monitors of the living as well as sentinels of the dead. How long they may have occupied their present position might, no doubt, be easily learned; but no one can say how long they may continue there. If one may judge by their healthy appearance, many generations of human beings may pass them, in health and in death, ere these worthy occupiers of such sacred ground bow to the wise decrees of a never-erring Providence.

J. ROBSON.

DANDELION COFFEE.

EVERY remark as to the comestible uses of weeds, or common horticultural produce, must be very useful, when put into such language as can convey, without much trouble or thought, the mode and practice of a beneficial result. I the more readily put pen to paper on a remedial subject, seeing that others, in your last number, have not thought it out of place to discuss these matters in that periodical.

Gardeners, in general, are wedded to certain vegetables as salubrificators. Some rank the Cresses as great antiscorbutics; others the Onion tribe, as purifiers and antispasmodics; and many the Lettuce, as expectorant and narcotic. All gardeners—from exposure to the sun especially, and vicissitudes of the seasons and climate, or artificial temperatures—suffer either from rheumatic pains, the consequence of impeded perspiration, or stomach and hepatic, or renal affections; but I am not going to write anything about medical matters, further than to observe, that my old friend next door has great faith in Dandelion (*Taraxacum*) root, as a panacea for liver complaints in general; and, as his mode of preparation is worth noticing, I give it to your readers.

You know all about digging it; do it now, and cut the roots into small pieces about the size of horse-beans. Put them to dry in an oven, or on a stove; they will shrink to the size of a coffee berry. When a cup of coffee is wanted, just substitute the dried pieces of Dandelion root for chicory, in the mill,—say a fourth part; grind it together with the coffee, and no one living can detect it.—W. H.

[In support of our correspondent, we quote the following from Mr. Hogg's "Vegetable Kingdom":—"The Dandelion (*Taraxacum Dens Leonis*), if blanched and eaten young, makes an excellent salad. It is sufficiently abundant, and we are sometimes surprised it is not more used than it is, considering the valuable properties it possesses. When the leaves have attained maturity, they are considered medicinal, and serve the purpose of tonics. But it is in the root that the greatest virtue resides. When dried, the root has a somewhat sweet, mucilaginous, and bitter taste. The milky juice was found, on analysis, to contain bitter extractive, gum, caoutchouc, saline matter, a trace of resin, and a free acid, starch or inulin, and saccharine matter. Mannite is found in the infusion, but does not exist in the root, and is formed by spontaneous changes, consequent on exposure. A peculiar crystallizable principle was discovered in the juice by M. Pollex, which he called *taraxacin*. It is bitter and somewhat acrid, fusible, but not volatile, sparingly soluble in cold water, but very soluble in boiling water, alcohol, and ether. It is now regarded as slightly tonic, diuretic, and aperient, and also as having a specific action on the liver, exciting it, when languid, to secretion, and resolving its chronic engorgements. In congestion and chronic inflammation of the liver and spleen, in cases of suspended or deficient biliary secretion, and in dropsical affections dependent on obstruction of the abdominal viscera, it has a marked effect, if employed with a due regard to the degree of excitement. When roasted and ground, it makes an excellent substitute for coffee; and on one occasion, when locusts had devoured the harvest in the island of Minorca, the inhabitants subsisted on this root. The extract of the root is said to act with effect in diseases of the liver

induced by long residence in India, the dose being three to ten grains three times a day."

Just as we were going to press, we received the following from *Emery's American Journal*:—

"Richly embossed in silken grass,
The golden Dandelion shines;
A sunflower in the cloudy spring,
And bright when summer's eve declines.

"The heart receives impressions fair—
The young, and playful, loving heart—
When opening wild flowers please us more
Than knowledge of their healing part.

"Our first essay in floral love,
We fondly trace it line by line;
The lowly strangers moved our love,
Unconscious of the cause Divine.

"In riper years, the wondrous ball
Of downy wings, attraction won;
Forsook by bee and butterfly,
But half its marvels were begun.

"For then we struck the truant's clock,
Unmindful of the wheels of time,
To gaze upon the seed balloons,
A sailing through the sunny elime;

"And see our little lives portrayed—
Some gently, others swiftly borne!
Some few a place congenial find,
More hurry whence there's no return!

"But bless'd is he whose budding spring,
Yields bloom for summer's hopeful skies;
When ripe for autumn's gathering hand,
His fruit on wings of promise rise."

"In some of our rural districts, the anxious herbalist may be met gathering what she calls Dandelion, as a 'cure' for the 'heart ague,' consumption, and numerous other diseases; the plant so gathered is a species of the numerous Hawk weeds that bloom about July. The true Dandelion is still extensively used as a medicinal herb on the European continent; it is also sold as a salad in the markets of France, while in Germany the roots are dried and used by the poor as we use coffee. Why it should be a 'waste weed' with us can only be accounted for because of our ignorance of the nature of our native plants. We wish that some of our scientific readers would take up the subject of 'Our Waste Weeds,' and thereby enable the working man, as he takes his 'walks abroad,' to make them as agreeable."]

DEATH OF MRS. LOUDON.—Jane Webb Loudon, compiler of several gardening and botanical works, and widow of the more generally known John Claudius Loudon, died on the 13th instant, at Porchester Terrace, Bayswater, in the 58th year of her age. We have some notes relative to this lady, which we may publish in a future number.

TO CORRESPONDENTS.

RAISING STRAWBERRIES FROM SEED (*K. K.*).—Ripe seed may be procured in two ways:—First, during the first year the plants have produced fruit, collect a sufficient quantity of well-shaped and well-ripened berries; the best time to do this is towards the end of the full crop, that we may be sure we have got the proper sort, and that we have not gathered the seeds either from degenerated plants, or from other varieties, which may have intruded into the bed. Put these berries upon a plate, and set them in a dry place out of the reach of mice. They will then decompose and dry up. No danger is to be apprehended from the berries becoming putrid or mouldy; for the decomposition of the pulp tends only to perfect the seeds. The Strawberries thus dried are to be kept till the following spring, when, by rubbing them between the fingers, the seed may be easily separated from the remains of the pulp, which may be thrown away as useless, and then the seeds will remain unmixed and almost perfectly clean. Or, secondly, take the Strawberries, selected as in the former case, and squeeze them in a hair sieve or sieve of a pretty close texture; pour water upon them, shaking and separating them at the same time with the hand; press them against the sieve, and in a short time the diluted pulp will pass through and leave the seed. These may be either sown immediately, or kept in a dry place until the spring. Sowing should take place immediately the seed is obtained from the berry, and the seedlings will then bear fruit the next year. Select a light, rich soil, with an easterly aspect, so as to be shaded from the mid-day sun; sow very thinly, in drills nine inches apart, and bury the seed not more than a quarter of an inch below the surface. Give gentle waterings daily, during dry weather, and keep the seedlings well cleared from weeds. In August, thin the plants to six inches apart, and those thus removed may be pricked out at similar distances in a like sheltered soil. In the early spring, give them a slight top dressing of leaf mould. Instead of sowing in the open border, some gardeners prefer employing pots or seed-pans, which we consider necessary only where small quantities of hybridised seed are to be sown. In that case the pans should be placed in a warm aspect, and on ground where the worms cannot pene-

trate; if placed in a frame, it will be an advantage, or a handglass, when only a single pan is sown, placed over it, to protect it from violent rains, as well as to forward the germination. A thin mixture of common whitening-and-water, and a thin coat of this laid on the inside of the handglass or frame light, with a soft brush, will be an effectual shade from the mid-day sun, and at the same time will admit sufficient light for the seeds to germinate and grow till they are strong enough to bear exposure to the sun and air.

KEEPING A COW (*Alpha*).—We have a letter sent to our office for you, which we will forward, if you will favour us with your direction.

FOUNTAIN IN AQUARIUM (*S. C. N.*).—If you had read the previous communication, at page 193, you would have remembered that the writer is dead. The fountain is supposed to be playing in a partial vacuum. The water from the jet is supposed to be running down the pipe w.

BLOOM OF SAGE (*F. B. P.*).—It is not rare. We have a large bed in bloom where this is written. It does not bloom where the young shoots are continually nipped off for culinary purposes.

VARIOUS (*F. C.*—, *Brighton*).—Ants will do no harm to your greenhouse plants. The water in the aquarium will not injure those plants. What Roses are they which require pruning? There are many trailing Roses.

PELARGONIUM AND GERANIUM (*Kenny*).—You ask, "What is the difference?" and we could only reply fully by giving lengthy botanical distinctions. The genus *Geranium* has been divided into three genera, *Geranium*, *Pelargonium*, and *Erodium*; but *Geranium* is such an old-established name, that every one is liable to apply it indiscriminately to *Geraniums* and *Pelargoniums*. They all belong to the natural order, *Geraniaceae*. *Pelargonium* is characterised by having usually seven stamens, and unequal-sized petals; *Geranium*, having ten stamens, and equal-sized petals; and *Erodium*, having five fertile anthers usually.

VINE LEAVES DISEASED (*A Cornish Subscriber*).—The leaves are so dry and bruised, that we cannot be certain as to the appearance of the disease. Are the leaf-stalks gangrened? If so, we should incline to the opinion that there is a deficient supply of sap, and that the roots require attending to. We should open the ground over them, give them some liquid manure, and, after returning the soil with a little manure mixed with it, mulch the surface, and keep it watered daily, whilst the dry weather continues.

MELON CULTURE (*A. Murley*).—In our No. 460, you will find full directions.

NAMES OF PLANTS (*Alethea*).—No. 4. *Lastræa dilatata*, small frond. No. 5. *Lastræa filix-mas*, true. No. 6. *Lastræa dilatata*, large frond in fruit. (*Kate*).—Your plants were nicely sent, and are as follows:—1. *Burchellia Capensis*. A stove evergreen shrub. 2. *Sedum oppositifolium*. A beautiful hardy border, or rock plant. 3. *Justicia speciosa*. Properly a stove plant, of quick growth; and roots from cuttings so freely, that young plants should be made every year, and the old ones thrown away. The leaf without a number, is from the *Habrothamnus fasciculatus*, and the *Arabis* is *A. grandiflora*, by some authors called *Caucasica*. No. 4 is still unknown to us. We have had many specimens of this from many different quarters, and will shortly answer all with its name.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.

AUGUST 17th. ORMSKIRK. Secs., Wm. Shawe, and James Spencer, Ormskirk.

AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth, Shipley.

AUGUST 28th. HALIFAX AND CALDER VALE. Sec., Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.

OCTOBER 7th and 8th. WORCESTERSHIRE. Sec., Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

GATHERINGS ABOUT GAME FOWLS.

WE were lately thrown into company where the question of cock-fighting was freely discussed. We do not propose to touch upon it here, but we think we gained some knowledge of Game cocks in general. One point was most amusing, and it was the variety of opinions about colour. Most of those present were cock-fighters, and prepared to pin their faith on any particular shade, which had with them always produced victors.

"Give me," said one, "a good Black-breasted Red, with blue legs."

"Wouldn't back one for a penny," said the next. "If you had said willow legs!"

"Nonsense," cried a third; "you are both wrong; there are none equal to the old Knowsleys, and they had white."

"I always think," said a very young man, "that they look tame, and are deficient in style; the white leg looks poor."

"I don't care for looks," said another; "I have fought them times and often, and I know they are good in the pit."

"Well," said one, who had not spoken before, "I prefer the Duck-wing to any for beauty, and I like them as fighters. What can be so handsome,—the straw hackle, the black breast, the copper saddle?"

"What, what! A copper saddle! I can't have that," said a huge, good-tempered man; "give me a straw, almost a white saddle;—a bright willow leg."

"Come, that is too bad," shouted another voice. "Whoever heard of a pure Duck-wing without yellow legs? I don't like either of them. Piles are my favourites."

"What sort of Pile?" asked his neighbour.

"A good red wing and saddle; a hackle white, lightly mixed with red; breast white, but shaded; with cream-coloured feathers. The hens creamy all over, and white legs."

"I have no faith in them," was next heard; "they are anything and nothing. They are not a pure breed."

"Which is the pure and original breed?"

Every man spoke for his own; but we are bound to say the Black-reds and Duckwings had more partisans than the others. We found it impossible to come to any agreement as to colour of feathers or legs, and, therefore, turned the attention to the points of excellence common to all good Game cocks.

Here we were more at home. Our first point raised the question—whether, at an Exhibition, they should be judged as fighting birds, or as beautiful specimens. Here was another difficulty. We, however, overcame it, by proposing that the points should be put irrespective of judging.

What should the weight of a good Game cock be?

The old amateurs were content with 3½ lbs., the younger wished to have them at least 4 lbs., and some wanted 5 lbs. The difference was got over by our remarking it would depend much on condition. A very shrewd old exhibitor remarked, that those who sought to make weights by fattening, would have no chance of success, if properly judged, as hardness of feather could not exist with fat. He considered fat as a fault in a Game cock; there should be lots of flesh, and muscle as hard as iron, but no fat. The head small and bony, tapering to the insertion of the beak, which should be strong, well set in, and curved; the eye full. Some objected to small heads, and preferred large ones. They were out-voted. The bird should be wide between the shoulders, narrower, but still wide over the hips, and then fall off rapidly till it comes to a point at the tail; the back should have the exact shape of a flat-iron. The thighs short, round, and hard to the touch as steel; the legs stout but not clumsy; the foot flat on the ground, and the spur near the foot. The advocates of large heads made a fight for it, but it was decided in favour of *snakey* heads.

No preference was given to any feather as a test of purity, but the feather of the particular breeds was to be insisted upon.

PRESCOT POULTRY SHOW.—JULY 8th.

THE following is the list of prizes:—

PLATE prize, Capt. W. W. Hornby, Knowsley Cottage. Second, J. Parson, Audershaw, Manchester.

Plate prize, J. R. Rodbard, Bristol. Second, J. K. Fowler, Prebendal Farm, Aylesbury.

Plate and Second, Capt. W. W. Hornby, Knowsley Cottage.

Plate prize, W. Evans, Hurst House. Second, Capt. W. W. Hornby, Knowsley Cottage.

First, T. Stretch, Bootle. Second, R. E. Ashton, Limefield, Bury.

Plate prize, Miss V. W. Musgrove, Aughton, Ormskirk. Second, H. Tomlinson, Birmingham.

First, W. Copple, Eccleston. Second, W. M. Lilly, Money Hill Hall, Kingsnorton.

Plate prize, Miss V. W. Musgrove, Aughton, Ormskirk. Second, J. L. Harrison, Foxholes, Laneaster.

First, R. Teebay, Fulwood, Preston. Second, J. K. Bartrum, Bath.

Plate and Second, W. C. Worrall, Rice House, Knotty Ash.

Plate prize, J. Dixon, Bradford. Second, W. C. Worrall, Rice House, Knotty Ash.

Plate prize, J. Dixon, Bradford. Second, Mrs. W. C. Worrall, Rice House, Knotty Ash.

First, R. Teebay, Fulwood, Preston. Second, J. Robinson, Vale House, Garstang.

First, T. Keable, Rowdefield Farm, Devizes. Second, J. Dixon, Bradford.

Plate prize, Messrs. Bird and Beldon, Bradford. Second, J. Dixon, Bradford.

Plate prize, J. Dixon, Bradford. Second, J. F. Greenall, Grappenhall Hall.

First, J. Dixon, Bradford. Second, J. F. Greenall, Grappenhall Hall.

First, J. Dixon, Bradford. Second, G. Ray, Ivy Cottage, Lyndhurst.

Plate prize, J. Dixon, Bradford. Second, G. Ray, Ivy Cottage, Lyndhurst.

Plate prize, F. Worrall, Knotty Ash. Second, J. Brown, Pole Street, Preston.

First, G. W. Moss, the Beach, Aigburth. Second, H. Worrall, Spring Grove, West Derby.

First, G. W. Moss, the Beach, Aigburth. Second, J. Dixon, Bradford.

Plate prize, Capt. W. W. Hornby, Knowsley Cottage. Second, T. Burgess, jun., Burleydam, Salop.

First, J. Dixon, Bradford. Second, J. Robinson, Vale House, Garstang.

First, Capt. W. W. Hornby, Knowsley Cottage. Second, Messrs. J. and R. Blackburne, Preston.

First, The Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, Messrs. J. and R. Blackburne, Preston.

First, G. W. Moss, the Beach, Aigburth. Second, R. E. Ashton, Limefield, Bury.

Plate and Second, J. K. Fowler, Prebendal Farm, Aylesbury.

First, J. Dixon, Bradford. Second, P. Longton, Woolton Hill.

First, T. Burgess, jun., Burleydam, Salop. Second, J. Dixon, Bradford.

PIGEONS.—*Carriers*.—First, C. Twist, Woolton. Second, Capt. W. W. Hornby, Knowsley Cottage. *Balds*.—First, W. Sephton, Preseot. Second, E. Astley, Roby. *Beards*.—First, J. W. Edge, Aeton New Town, Birmingham. Second, W. Sephton, Preseot. *Runts*.—First, W. M. Lilly, Money Hill Hall, Kingsnorton. Second, E. Worrall, Knotty Ash. *Owls*.—First and Second, E. Worrall, Knotty Ash. *Fantails*.—Prize, W. M. Lilly, Money Hill Hall, Kingsnorton. *Powders*.—No exhibitors. *Any other variety*.—First, E. Worrall, Knotty Ash. Second, A. G. Brooke, Birkenhead.

GAME COCK.—First Plate Prize, Capt. W. W. Hornby, Knowsley Cottage. Second Plate Prize, G. W. Moss, the Beach, Aigburth.

ANDALUSIANS.

I ACCEPT, with much pleasure and many thanks, your definition of this much valued breed of fowl. The true breed and form were known, not only to me, but to all in this locality, for the last twenty years, and yet, when shown, were, *without a single exception*, beaten by a semi-white-faced bird. The large ear-lobe, no matter how pendent, won the day; and now these birds are almost universally dashed with the Spanish, for the sake of the *ear-lobe*; so that, for lack of a true definition and standard, the proper and real fowl has been crossed to suit the times. Upon my word, it is very hard for a careful man to be done by hybrids, and, on the matter being settled, to know that his breed is the true one, and that they are lost to him through disgust. Thus, for the sake of classifying these blue Minorcas, we call them Andalusians, and determine their points as the following:—

Cock.—Body-colour, light blue; hackle, saddle, and tail, shaded with very dark brown; face, red; ear-lobe, red—if white, not pendent; comb and wattles, very large; legs, blue; size, large, not too stilty.

Hens.—Light blue entirely, with hackles a trifle darker; face, red; ear-lobes, if white, round and flat.

These birds breed true, although they are found occasionally with the chickens of the old black Minorca, or Moorish birds, and so, indeed, are whites. There is no mistake as to the true animal. On looking over a flock from several yards, the mixed breed, generally half Spanish, are with combs, ear-lobes, bills, and tails, of all sizes; and faces and legs of all shades of white, in the former, and yellow and black, in the latter; but the true blues have all the same contour: this must prove something. I have seen chickens from three pure birds, this season, and such a medley was never seen, partaking all, in some degree, of the Spanish.

But not so with the old-fashioned blue Minorca, with the immense comb, red face, and Hamburg ear-lobe. These threw chickens marvellously true in essentials, although I knew they had been tainted with the Spanish. They would throw back, I am happy at last to have learnt, the true description of an Andalusian; and I hope, next season, to breed some well-defined Andalusians.—W. H., *Exeter*.

PIGEONS.

(Continued from page 232.)

RAISING A FLIGHT OF TUMBLERS.

PIGEON fancying seems to be of very ancient date. In the Scriptures frequent mention is made of Pigeons and Doves. They appear to have been much kept by the ancient Hebrews, and were among the sacrifices made as peace offerings. Christ also expelled those that sold Doves out of the Temple. The love of these birds is widely spread among the nations of the earth. The Romans built handsome towers for their accommodation, and Pliny complains of the high price paid for some in his time. In India a great rage for them exists among the inhabitants, and I have met with an account of the flying fancy in Delhi. The Persians are also fond of Pigeons, and all Mahomedans regard them as sacred, on account of one having once saved the life of the Prophet: it is reported he trained one to peck in his ear, by which he pretended the Holy Ghost was whispering to him.

In Kohl's account of Russia, the fondness of the merchants for this bird is also alluded to, and by them it is regarded a sacrilege to kill a bird in whose form the Holy Ghost descended on our Saviour.

Among all the amusements incident to Pigeon-keeping, none I consider so engaging as a well-ordered flight of Tumblers,—their high soaring flight and aerial gymnastics attracting the admiration of the beholder. I will, therefore, offer a few remarks on the raising and managing a flight of Tumbler Pigeons. Of this breed there is a greater variety of colour and marking than of any other; so that the amateur need not be at a loss as to choice in that respect. The high-bred, fancy, short-faced Tumblers are generally too weakly and delicate to sustain a long flight; consequently the birds selected for this purpose should be somewhat stouter, and of stronger constitutions; not that I admire the coarse, mousey, common birds; but I prefer a well-made, short-beaked, round-headed bird, and one that tumbles well and cleanly,—not more than two or three summersaults at the most at one throw; for, if they roll over too often, like the Dutch birds, they are apt to leave the flight and bring down the others, which is very objectionable.

Procure, if possible, a few high-flying birds, to train the young ones to rise high when out. This is of much importance, and will save much trouble. The flying Tumblers should be kept in a roomy loft by themselves. A trap, or area, as I have before described, is indispensable, in order to manage the Pigeons successfully. Once a day they should be turned out to fly; the fore part of the day is the best, as when the sun shines too hot they do not fly so willingly. When in practice, they will mount at once high into the sky, occasionally clapping their wings, and turning over backwards till they rise to their full height or "pitch," often going quite out of sight, but keeping pretty much over their abode. They will thus continue on the wing for two or three hours; when they begin to descend they tumble very much. When down they should be enticed in, and kept confined for the rest of the day, and not allowed to loiter about outside, or associate with other Pigeons. Their loft should be made as comfortable as possible, and be provided with everything they require,—such as clean water, a bath, the well-filled hopper, a salt-cat, grits, green food, and materials for nesting,—so as to prevent any desire to roam about, when out, to obtain these enjoyments; if not, it will soon be found that, instead of flying off at once, and mounting high in the air, they will make for some roof, or other spot, where they can find that for which they are longing; therefore, it is of great importance to remove any temptation, by supplying all their wants in their own loft. By this means, they will at once soar when let out, though, perhaps, at first it may be necessary

to drive them up, by waving a flag, or otherwise frightening them. A few birds used to high flying assist much in teaching the young ones, as they become strong on the wing, to soar; but it is very difficult, or almost impossible, to teach those that have long been accustomed to fly about at random, to fly high regularly. The best way to proceed with such is, after they are accustomed to the place, to send them off by a servant to the distance of half a mile or so, while the others are out; they will then most likely rise very high and join them. By continuing this for some weeks, they will get accustomed to fly. Any that are determined not to rise need not be let out with the flight, or even at all.

When in full practice, they will start off from the trap directly it is opened; and, after rising high, and flying a good time, according to the state of the air, will descend and sit on the roof, gradually going in through tipping holes and boltwires, as the trap ought to be closed, and not opened till the next day. It will be advisable not to let them out during a fog, or storm of wind or snow; nor can they fly well or long in rain, though they may enjoy a warm shower on the roof. Blue-bearded, and black and blue Baldheaded Tumblers are generally considered the best for high flying. But the birds must be kept in constant practice, or they become fat and lazy, and will soon feel fatigued. There are times, at a certain state of the air, when they will continue longer on the wing than usual. At such times, hens heavy with egg should not be let out, just before laying, or they will sometimes drop their eggs on the wing. While sitting, if they are turned out before ten o'clock in the morning, particularly in cool weather, it will be advisable to see that the hens are on the nests; for, if both birds are allowed to go out together for a long flight, the eggs will be cooled and spoiled. After the cocks have returned, and taken their place on the nests, the hens may be allowed to have a fly to themselves, or with the heartier and better flyers, who would be likely to rise again.

I have noticed that, when in good training, the Pigeons rarely eat much, till after they have had their exercise. But, when they return to the loft, the hopper is generally much in request, particularly by such as are feeding their young.

It is, indeed, a very pretty sight, to see a nice flight of Tumblers, flying high in the clear blue sky, keeping close together, and appearing no larger than gnats, or frequently almost lost to sight; and, as they rise or descend, to watch their movements and tumbling, their wings glistening in the sun. But to the owner it becomes still more interesting, as he is enabled to trace their colours, and notice the performance of each known individual.

Whatever the marking of the birds, or the varieties kept, if more than one sort of marking,—such as Bearded, Bald-headed, and Magpied, or Helmeted,—care should be taken that they are paired to similarly marked mates, or useless, ugly birds will be produced. Whole colours and mottles may be allowed to pair with better results. Pigeons are very constant to their mates, and, when once paired, rarely separate during health. Flying Tumblers give less trouble in breeding than any other variety of Pigeon, where any pretension to fancy is desired.—B. P. BRENT.

(To be continued.)

OUR LETTER BOX.

GAPES IN CHICKENS (*Azalea*).—It is Stockholm Tar that is used in the treatment recommended by "The Authoress of My Flowers."

LONDON MARKETS.—JULY 19TH.

POULTRY.

We have to record a diminution in prices and demand this week. The population of London is fast leaving it for a time, and the markets feel the influence of the exodus.

	Each.		Each.
Large Fowls ...	6s. 6d. to 7s. 0d.	Leverets.....	2s. 6d. to 3s. 6d.
Small ditto.....	3 6 „ 4 0	Pigeons	0 8 „ 0 9
Chickens.....	2 0 „ 3 3	Guinea Fowls.	0 0 „ 0 0
Goslings	6 0 „ 6 6	Rabbits	1 5 „ 1 6
Ducks	2 6 „ 3 3	Wild ditto.....	0 8 „ 0 9

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WEEKLY CALENDAR.

Day of Mth	Day of Week.	JULY 27—AUGUST 2, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
27	Tu	Anagallis.	29.944—29.864	76—59	S.W.	.02	18 af 4	55 af 7	48 af 8	17	6 12	208
28	W	Androcymbium melanthoides.	30.090—29.830	77—41	N.W.	.33	19 4	53 7	0 9	18	6 11	209
29	Th	Anomatheca cruenta.	30.151—30.114	80—44	S.W.	.01	21 4	52 7	11 9	19	6 10	210
30	F	Anthericum hirsutum.	30.031—29.974	77—61	S.W.	—	22 4	50 7	22 9	20	6 8	211
31	S	Anthericum pilosum.	30.051—30.008	82—52	S.W.	—	23 4	49 7	33 9	21	6 5	212
1	SUN	9 SUNDAY AFTER TRINITY.	30.064—29.955	78—59	S.W.	—	24 4	47 7	48 9	22	5 58	213
2	M	Adamia versicolor.	30.082—30.056	80—44	S.W.	—	26 4	46 7	8 10	☾	5 58	214

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 75°.2 and 52.0°, respectively. The greatest heat, 92°, occurred on the 1st, in 1846; and the lowest cold, 38°, on the 28th, in 1854. During the period 115 days were fine, and on 102 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

WHEN transplanting *Brussels Sprouts*, *Cabbages*, *Broccoli*, and other such plants, at this hot season of the year, it is advisable to dig a small hole in a convenient place, and to mix up the earth with water, to the consistency of thick paint, into which the roots of the plants are to be dipped before planting; if a little soot is mixed with the puddle it will be a preventive to the attacks of grubs.

BROCCOLI.—The *Cape* sorts, if intended for use in the autumn, should be liberally supplied with water in dry weather.

BRUSSELS SPROUTS.—Earth up, after rain.

CABBAGE.—Sow *Early York*, *Vannack*, *Battersea*, or *Atkinson's Matchless*, for a supply at the end of the year, and in the spring.

CARROTS.—A few of the *Early Horn* may be sown on a warm border, to stand the winter. We have frequently found this very acceptable for spring use. Keep the succession beds properly thinned.

CELERY.—Abundance of water to be given to the newly planted, and to the early crops. Continue to plant out, taking up the plants with as much soil about their roots as possible.

ENDIVE.—Sow *Green-curved*, for winter crop.

KIDNEY BEANS (DWARF).—Earth-up, to protect from high winds; and all pods to be kept constantly gathered, to prolong their bearing state.

LETTUCE.—Sow *Cos* and *Cabbage*, for late use.

ONIONS.—Sow a few, for salads in autumn.

TURNIPS.—Sow. If dry weather sets in, water the ground after the seed is sown, and cover with mats, or some leafy branches, for a few days.

FRUIT GARDEN.

CURRENTS and GOOSEBERRIES.—Thin the wood of the present year's growth, leaving only sufficient to furnish next season's crop. Haythorn's hexagon netting is very cheap and efficacious for protecting the fruit from birds, &c.

FRUIT TREES.—As the late rains have caused an increased growth of midsummer wood, and, probably, a second growth of foreright shoots that had been stopped, it is advisable, in such cases, to delay the stopping, or cutting back, for ten days or a fortnight, until the circulation of the sap becomes more languid. The leading shoots to be kept neatly trained, with sufficient space to allow the free exposure of their foliage to light.

STRAWBERRIES.—Increase the stock of runners, for new plantations, without delay.

FLOWER GARDEN.

Attention should be given to keep the turf, gravel, and edgings of all kinds, in the neatest order. Dead flowers to be picked off daily, and stray growths reduced within proper limits.

CARNATIONS and PICOTEEs.—Continue to layer. For pegs for general purposes, commend me to the most accessible. Slight twigs, either green or withered, are to be found close at hand in every place; cut into five or six-inch lengths, and bent between the fingers until they crack in the middle, they are most useful. To my friend, Mr. Fish, be the honour of giving publicity to a very simple and effectual plan. Advantage should be taken of dry weather, to fertilise the various flowers from which seed is desired.

CLIMBING and TRAILING PLANTS to be frequently gone over, to keep them neatly trained, and secure from high winds.

DAHLIAS.—Fork the ground slightly, and mulch the surface with rotten manure. Trap earwigs. Although rows of small pots on the tops of stakes are unsightly, I am not aware that a better plan has been discovered for their destruction. Water liberally, in the evening, when the weather is dry.

PANSIES.—Continue to put in cuttings, and prepare a bed of good loamy soil for the rooted cuttings. Mustard-seed is recommended by some florists to be sown; when it has grown a few inches, and is dug in and mixed with the soil, it is said to be the cause of banishing wireworms from the bed.

PINKS.—Continue to plant out pipings. If seed is wanted, remove the decayed petals from the pods; for, if wet weather sets in, they will cause mouldiness, and consequent destruction.

ROSES.—Continue to bud. Apply manure water where the bark rises badly, to cause the sap to flow more freely. Water the Perpetuals with liquid manure, to encourage the production of autumn bloom. Cut off all dead flowers, and keep down suckers. Instead of clearing the stems of wild shoots, the most suitable should be retained, and budded, to form pyramidal—not mop-headed—standards.

WILLIAM KEANE.

THE CAPE GOOSEBERRY.

(*PHYSALIS EDULIS*.)

THE first thing to say about the Cape Gooseberry plant is, that out of a hundred British gardeners ninety-nine of them pronounce the "Latin name," *Phy'salis* wrong, by putting the accent on the *a*, instead of on the *y*. The next thing to remark about it is, that it was in common cultivation here fifty years since, and well known to the last generation of gardeners; but that the gardeners of the present day, with few exceptions, are not yet aware of the value of the fruit of this plant, "the Cape Gooseberry," as an additional and valuable dish in the dessert; that it may be had for nine or ten months in the year; that the stamp of fashion has been fixed upon it, in London, as recently as last spring, at the dinners of the very highest circles in the peerage; and that it is neither a Gooseberry, nor a Cape plant at all.

Physalis edulis was so named, in the "Botanical Magazine" (t. 1068), upon a very slender pretext: the lawful name of the plant was *Physalis pubescens*. In the temperate parts of Peru, and in Chili, there are two kinds of *Physalis*: one an annual, *Peruviana*, and our present subject.

The annual is a medicinal plant, like our European Alkekengi; and the perennial, our Cape Gooseberry, is used in the dessert, and in cookery and preserves. From the descriptions of these two plants, by the authors of the "Flora Peruviana," and by Father Feuillée, a Frenchman, who first described the annual, Linnæus could not make out which was which from his specimens. Therefore, to make the thing more clear, when the Cape Gooseberry was well known in England, the "Botanical Magazine" called the edible kind *edulis*, and the medicinal kind *Peruviana*; thus quashing the proper name (*pubescens*) altogether. Yet the name *pubescens* is retained in our very best catalogues to this very day.

Amongst the first people who took advantage of this new fruit, discovered in Peru, were the Cape colonists, who introduced it to the Cape, whence it was sent to the early settlers of New South Wales as a promising plant for their climate; and these settlers, having other fish to fry than the slippery eels in botany, called their new acquisition after the place they had it from, and the uses they made of it. It came nearest to the use of the Gooseberry at home: hence the origin of the name, "Cape Gooseberry," for a Peruvian plant.

Every part of the plant is covered with a soft down,—pubescence is the botanical name of such condition. Most of the soft-leaved plants, which belong to the same order, the order of *Solanums*, are peculiarly tasteful to the red spider, and are so liable to its attacks, that in the times of hot flues, high night temperature, and husky atmosphere of our glass houses, the Cape Gooseberry was one of the plagues of gardeners. Any new foreign plant, which was then thought much of, was wintered in the stove, "for fear of accident" in any other house; and in the stove the Cape Gooseberry is evergreen, and more than ever liable to the inroads of the greatest enemy of the forcing gardener of those days. They, the forcers of the last generation, were right glad, when the frost was over, to allow them to plant out their Cape Gooseberry plants, against the south walls, like Tomatoes. In September, some took cuttings of their Cape Gooseberry, struck them in a hotbed, and kept them in the stove through the winter; and some took up the old plants, as we do the scarlet Geraniums, and kept them on the curbs of the pine stove during the winter; while others took up the old plants, and cut them down like Dahlias, but wintered them just like Pine Apples.

Were it not for fear of being thought to be too old to be good for much, I could tell of many other plants, which I myself had seen under treatment, in my early days, that no gardener of the hothouse-school would now believe it possible to keep alive; but so it was. Yet the difference was not as between flues and hot-water pipes in the present day, but far worse than that. A high winter temperature was very distressing to plants in general, and very much greater to those from temperate regions, like the Cape Gooseberry. But when we consider the excessive dryness of the air of hothouses, consequent upon the great heat of the flues in those days, and the want of a proper knowledge of the good that a moistened air would do to plants, we need not wonder that a fruit plant, which is naturally very liable to the attacks of the red spider, and not very promising to pay for the trouble and care of the garden, had soon fallen into disuse.

But modern gardening is a different art, since the introduction of the hot-water system, from what it was in those days, and gardeners now think it an easy matter to accomplish what their fathers considered impossibilities. The revival of the profitable culture of *Physalis edulis* is the most recent example of that "easy matter."

For the last ten or a dozen years the cultivation of this "new fruit" was slowly and steadily making its way among a few great private families, but it was not till last November, at Willis's Rooms, that it was brought out prominently before the public; and, this spring, the fashionable world "took to it" at their dinners,—not as a new fashion, but as a really good thing, when properly done.

For its medicinal virtues we have the testimony of Feuillée, who first described the Peruvian Alkekengi, which is closely related to the Cape Gooseberry. He says the doctors, in South America, make great use of the berries in calculous disorders, and gives the manner of using them, which is, "to bruise four or five of the berries, either in common water, or white wine, giving it the patient to drink, when the success is astonishing." The Duke of Malakoff, General Pélissier, is said to be very partial to it, and to "look for it" when he goes out to drive about London. I had a dish of it lately from a Scottish nobleman, who is as fond of it as his Grace of Malakoff, and who had it regularly at his dinners, both here and in Scotland, for some time. I have been asked to write out an account of the proper way of growing it, but, to tell the truth, I did not well know the best way myself; and recollecting having read, not long ago, a specious dissertation on crossing plants, by one of our best English writers; and knowing perfectly well, from my own experience, that the said writer did not know the value of a straw about some of the different points which he thought he made out so plain by clear reasoning; and feeling for him, and determining not to be caught in such a trap,—assuming a perfect knowledge of a subject which I did not understand,—I went about to see and hear how the gardeners managed to give such a zest to this "new fruit;" and, after seeing what I could, I came to the conclusion that the practice of Mr. Kidd, our friend with the Marquis of Breadalbane, at the Stud House, Hampton Court, is the simplest, the best, and the most profitable to follow. And I may further add, that any one who can keep a scarlet Geranium over the winter, and can fruit a Peach in a pot, or against a wall, will have very little to add to his stock of gardening knowledge, to enable him to have a dish of *Physalis edulis*.

Mr. Kidd has simplified the treatment of *Physalis edulis*, as much as he did that of the Tomatoes, which he grows, this season, right out in the open garden, without even the aid of a wall or fence. He turned a large piece of ground into ridge-and-furrow shape, running east and west on the south side,—the slope from the ridge to the furrow is at about forty-five degrees of angle, and about four feet in width,—and on this slope the Tomatoes are as promising as they were this time last year on the wall border.

The next move will be to hear of the Cape Gooseberry being bedded out on similar ridges, and ripening fruit by the bushel for pies, puddings, and preserves, and for one of the most useful dishes for the dessert. Modern gardening has done wonders, and this is one of the latest. The natural taste and flavour of this fruit in Peru, can now be enjoyed for the first time in England.

The plants must not be had from seeds, but from cuttings, and from cuttings they will fruit all the year round, where people have the convenience of stoves. But, for the great bulk of growers, the best way is to

make cuttings at the end of August, for fruiting the following year, to keep the young plants in small pots all the winter, and to give them no more nor less heat and nourishment than they would to young *Tom Thumb* Geraniums. Mr. Kidd puts four good cuttings in a large 48-size pot, in good loamy soil, and has his first crop of fruit off them before he changes the pots; and when the end of the spring is dry and hot, he puts the pots in saucers of water to ripen off the last of the crop; after that, or on the turn of midsummer, he plants them out against walls, as others do their Tomatoes; and, as soon as they get hold of the free soil, away they go flowering and fruiting till a smart frost puts a stop to them. Or an old plant or two might be cut down in October, just like cutting a Geranium, and taken up with balls, to be saved half dry like balls of Fuchsias, and to give these a little heat in the spring to cause them to make early wood for cuttings, and to plant out the plants from these cuttings along with the bedding plants, and they would fruit from about this time. The best place of all for them would be an orchard-house, and to have them rather under potted, than to give them too much room at the roots. Seedling plants go too much to leaf and growth.

D. BEATON.

LOOKING AROUND US.

CAMELLIAS OUT OF DOORS.

"SHALL I allow my Camellia plants to remain in the greenhouse, after the buds are set, or place them out of doors?" This is a matter of very little consequence, provided abundance of air is given in the house, with a fair portion of light and plenty of water. The foliage is generally of a brighter green when kept in, and the buds swell earlier, and consequently, if thick-set, want thinning sooner. The plants become somewhat hardier when set out of doors, and the blooms come a little later. One chief reason, in many places, for putting them out is, that, if encouraged to grow beneath the shade of Vines, &c., the buds will not be so well matured as if they were placed out of doors for two or three months after the buds were set. Another reason is, that if they have been kept in the greenhouse, their removal outside would place more room at your disposal, for Fuchsias, Achimenes, Balsams, and other summer-flowering plants. In placing such plants out of doors, two things should be thought about,—securing the standing place from worms, and choosing a position, in which the plants may have a little of the morning and evening sun, but be sheltered from its rays from 10 A.M. to 3 or 4 P.M. Azaleas may be treated in much the same way,—only they want a good syringing every afternoon in fine weather, plenty of moisture at the root, and more direct sunshine, as the autumn progresses; but even when the tops are thus exposed, it would be good policy to protect the pots from the sun's rays.

REPOTTING AZALEAS AND CAMELLIAS.

"I am quite bewildered in this matter; there are so many contradictory advices,—some recommending spring and some autumn." Most likely every operator would find his own peculiar method the best; and you would be equally successful if you followed his mode in all its minutiae. Error and failure generally arise from attempting to combine the minutiae of different systems. Where opportunity offers, I would prefer reshifting as soon as the flowering ceased and the young shoots had made an inch or two of growth. In doing so, the plants must be kept under cover afterwards, until fresh growth is freely proceeding, and the buds are formed. If not done so then, I should

prefer doing it as soon as the flower-buds were set; and, though a little closeness afterwards would not disagree with the plants for a short time, it is not essential; as the mere heat of the season will cause roots to work freely in the new soil, and the rather free exposure of the tops will prevent the buds growing too freely or starting into shoots. I have sometimes done this work in autumn; but, when done later, I always expected to see the flower-buds of Camellias and Azaleas suffer in proportion, though the plants might be increased in health and vigour. To secure well-developed flower-buds, I would recommend the repotting of such plants not to be deferred, if possible, over July. There will then be plenty of time for the roots to pass through the new soil and twine round the sides of the pot, which is almost essential to secure perfect and abundant blooming. Large plants will merely require a portion of the soil, outside the ball, to be carefully picked away, with a wire or small stick, and be placed in a similar sized pot, well drained, or in one just a little larger. Young plants may have a larger shift. Plants already in large pots, or tubs, provided the drainage is all right, and water is given as it should be, will be kept in health for many years, merely by picking away a portion of the surface soil, or compost, and replacing by fresh. Azaleas of such an age, when growing freely, and also when showing bloom, and when flowering, will relish weak manure waterings, of a cool nature, such as that obtained from old cowdung. Top dressings of the latter will also be useful, if rising two-years-old and dry. Camellias are not so particular, but, provided the manure water is weak enough, will relish it, whether it be of a hot or cold nature, though the latter will be found the safest. Sandy Heath mould is still the best for Azaleas, though, as the plants get old and established, nodules of dried cowdung, and pieces of fibry, turfy loam, will alike tend to keep the plants luxuriant and stubby. In the case of young Camellias, Heath soil and loam will do, in equal proportions; but as they get on in age, the compost should be chiefly sweet, fibry, brown loam.

TREE RHODODENDRONS. AND VARIETIES.

"These seldom flower with me, though they grow freely enough; what can be the reason?" The safest plan is to treat them much as you would do a Camellia or an Azalea. Encourage them to make fresh shoots in the spring, and early summer. If a little shade were given at first, remove that as soon as the shoots are from three to six inches long, and give less water; but not so little as to cause the plants to flag at all. This slight check will arrest growth, and cause the bud, in the point of the shoot, to swell. Encourage this by a little manure watering. If the plants cannot be moved as soon as the bud gets thus round and plump, give all the light and air possible, and no more water than will just keep the plant from showing distress from dryness; for, if too much water is now given and the weather should be hot, you will run the risk of starting the most of these buds into shoots, instead of retaining them for getting huge umbels of flowers in early spring, or even mid-winter. When the plants are easily moveable, it is best to remove them out of doors, when the buds are thus fairly set and swelling, giving them a position that will shade them from the sun at the hottest mid-day hours, and just water enough to keep the buds slowly swelling. By the first or second week of September, the plants may be set right in the sun; but the pots protected with a piece of matting, or turf, or anything to keep the roots from being scorched. The buds will thus swell to a large size, and not be incited to start prematurely into shoots; and as the temperature increases in winter and spring, either naturally or artificially, the buds

will swell kindly, and the blossom be produced in fine masses.

CYTISUS ATTLEEANA, RACEMOSUS, AND OTHERS.

"I had some fine plants of these that bloomed abundantly, but are now nearly leafless, and looking miserable. They are now out of doors?" Probably, in this hot season, they remained long enough in the house before you took them out. There is little doubt the plants have been eaten up by the red spider, but there is yet hope for them. I have seen them with scarcely a leaf, and yet a mass of bloom in winter. But this is now July, and, therefore, no time must be lost. Clear the plants of red spider, and fresh, healthy growth will soon appear. Proceed thus:—Cut away all seed-pods, and the remains of last year's racemes of flowers. This will make the plants more manageable. Dissolve a quarter-of-a-pound of soap, into six to eight gallons of water, place it in a tub, and, after tying a piece of mat over the soil in the pot, lay the plant across the tub on a board, and move it so that you drench every part of the plant with the soap-water. Do this in the morning, place the plant in a shady place, and repeat the same operation in the evening, and then, next morning, syringe equally carefully with clean water. This may remove most of the insects, but not all their eggs, and, therefore, in a day or two, the dose must be repeated. The washing will be sooner effectual if you add as much size to the water, when warm, as will make it slightly sticky when you place a small portion of the liquid between the thumb and finger. Size-water, thus strong enough to be adhesive, I consider one of the safest cures for ridding plants of insects. It prevents them having access to air, and without that, insects, like men, must die. If not very strong, the size will do no harm to plants, but quite the reverse, and even if the water is rather strong, from most stems and leaves it will crack and fall off, when thoroughly dry. The use of the tub is to save the liquid, that what falls from the plant may be used again. Soapsuds, or rather soap-water, is chiefly more valuable than common water, for this purpose, because it is more adhesive and smothers as well as washes off. The dissolved fatty matter, like the animal matter of the size, acts as a nourishing fertiliser. When thus cleaned, and the young shoots breaking freely, encourage with clear water syringings morning and evening. Repot in fresh soil, or, at least, examine the drainage and fresh top dress.

FLORISTS' PELARGONIUMS, CUTTINGS, &c.

"Many of my plants have finished flowering, but they are yet green and vigorous, without a discoloured leaf upon them. Shall I prune them back for next year, and make cuttings of the shoots?" This may be done, certainly, and you may have moderate success, but we advise doing neither at present. If you cut back your plants now, the stems will break into fresh shoots; but these will be extra liable to mishaps, diseases, and insects. Cuttings of the succulent, green shoots will strike freely enough if too much water is not given them; but they will require more care, and, after all, make, most likely, inferior plants to those raised from brown, well-ripened shoots, from which many leaves have fallen, and others have assumed a brownish, weather-beaten hue. In the case of all succulent-stemmed, leaved Pelargoniums, then, set the plants in a place out of doors full in the sun, and where, if necessary, you can protect them from heavy rains. Place them rather thin, in order that the sun's rays may play about them and around them. Give no more water than will just keep the leaves from flagging: a little put on the ground, instead of in the pot, will generally be sufficient for that, unless in very hot weather indeed. By such treatment, in a few weeks, the stems will be

getting browned, and the plant, altogether, more stored with organisable matter. When cut, or pruned back, neither the old plant nor yet the cuttings will break and grow so soon as if this ripening process had been neglected; but the ultimate success and freedom from annoyance will amply make up for the first seeming drawback. All the fancy Pelargoniums must have less of this drying process when exposed to the sun, than the more succulent-stemmed florists' Pelargoniums; neither should they be so much cut back. The cuttings of the fancy kinds, especially the weaker growing of them, would be better for the protection of a handglass; but the other more vigorous kinds, if the shoots are well browned, and the stems are merely cut into lengths, with a joint at the base, and another at the top, even though they have no large leaves on them, but the bud, where the axil of leaf was, is all right, will strike as well in sandy soil on an open border, during this month, as anywhere under the greatest coddling.

HARD-WOODED PLANTS.

"Shall I keep my Chorozeas, Apherexis, Dillwynias, &c., on the stage of the greenhouse, with plenty of air and light, or shall I put them in a sheltered, shady place, out of doors?" Neither, if you can do better. The plants will do very well on the greenhouse stage, if you water them as they require it, and shade the pots a little from the fiercest sun. The plants will do out of doors, as a makeshift; but, unless when beginning to grow, after being pruned back, the plants should have no great amount of shading. The tops, when growing freely and ripening their wood, will stand the sun very well. It is the roots that suffer in red earth pots, when greatly heated by the sun's rays. To remedy this, a slight shade for the pots next the sun will be an advantage in the greenhouse. Placing a small pot inside a larger one, will have a similar effect. If exposed in the open air, the pot should be sheltered. Cold pits, or turf pits, therefore, are the best place for them in summer. The pots are thus shaded from the sun's beams, while the heads of the plants are exposed: and by means of shades and sashes, they can be protected from extra heat, and also drenching rains, though in general freely exposed to the atmosphere. R. FISH.

THE MINIATURE GREENHOUSE.

(Continued from page 207.)

RESUMING this interesting subject, the next point to be considered is, how to propagate them. This is an important operation, for upon its success depends the growing of these plants in such tiny pots, the rooting of them previously being almost useless, because, the pots being so small, the roots would either have to be greatly reduced, or so cramped in potting, that the plants would scarcely live or thrive afterwards; and, besides that, my young gardeners would find it much easier to obtain a batch of cuttings than plants; or if they purchased a good large plant—large in comparison with such as they desire to grow—such plant would yield them a good supply of cuttings.

Looking over my proposed divisions of my subject, I see next to propagation is the *soil* these plants require; and next, the *pots* they need, and the *potting*. Now, previously to putting in the cuttings, we shall need the soil and the pots to receive them; and first, as to

The Soil.—Let us remember, the plants we wish to grow are of a succulent nature; that is, their stems and leaves are full of sap, scarcely ever approaching to that dry, hard state, denominated woody. That being so, the soil should not contain so much manurial

matter as the soil intended for the growth of a Geranium or a Fuchsia. The soil, then, for these plants should consist of loam, such as can be obtained in a pasture field: the very best would be such as the mole throws out in searching after the worms, or forming his homely nest. In addition to this loam, add a free mixture of either silver sand, or finely-sifted river sand; then add to this a portion of sifted lime rubbish, and mix them all well together. This will form a compost that will grow these succulent, juicy-stemmed plants well.

The Pots.—As the plants are intended, perhaps, for a parlour, or, may be, a cottage window, the pots should be made neat, and of the best material. Order them at a pottery, of such shape and material, and let the sizes be from one inch to three inches wide, and from two to four inches in depth.

The Cuttings.—Having obtained the soil and the pots, then look out for the cuttings, and form them by taking off the lower leaves, if they have any. The Cacti will have none, neither will the Stapelias. The two latter will only require the end to be planted made quite smooth. Each cutting should not exceed from one inch to one inch and a half long.

After the cuttings are made, our young gardener must exercise a little patience. The cuttings must lay on a shelf for at least three days before they are planted; for if they are planted immediately, the pores of the stem are so open, and the matter of which they are composed so soft, that they will decay and perish directly; therefore, be careful on this important point. Break into small pieces a few potsherds, and when the bottom of each cutting appears a little dried up, put some of the small broken pots at the bottom of each pot, and fill them nearly full with the compost in a moderately dry condition, pressing it in very firm. That being done, then plant the cuttings one in each little pot; make them to stand upright in the very centre of each pot; and, mind this point also, do not give any water to them for at least a week or ten days; then give a very small quantity. The best place to put the cuttings in is a window facing the morning sun; or, if you have not one so placed, then shade them from the noonday sun until the roots are produced and evident growth begun; then let the sun shine fully on them, and increase the quantity of water, but never make them very wet, nor put any saucers under them, unless you raise the bottom of each pot so as not to come in contact with the water that may have run through the soil. Stagnant water is very fatal to these soft, pithy-stemmed plants. Having been successful in rooting the cuttings, the next question is,—

Where to Grow them.—Now, if the cultivator has a tiny or miniature greenhouse, he may grow a great number of these plants in it, by fitting it up with narrow, neat shelves, and placing the plants, while they are small, pretty close together. If, however, there is no greenhouse, then form a little stand of three or more shelves, facing a window, and rising up in a stage-like manner from the window-sill; also, on each jamb, or side of the window, form some neat, rounded-off shelves, supported by brackets. On each of these three plants may be placed. I have seen a window so managed, that held nearly a hundred plants, and was exceedingly interesting, even to passers by, and must have afforded a large amount of pleasure and innocent recreation to the owner.

In Regent's Park, London, there was formerly a greenhouse window filled with a fine collection of Cacti and similar plants. The window, or windows, for I believe there were two so formed, were pushed out, supported by three strong stone brackets, and extended a little on each side. Shelves were put

up on each side, and on them plants were placed, consisting chiefly of the most beautiful Cacti of the *Echinocactus*, *Mammillaria*, and *Melocactus* subgenera. Some of the *Epiphyllums* were grown in ornamental baskets, and suspended from the roof. A more interesting sight I seldom saw. The plants grew finely, and flowered well, and were the admiration of every beholder, much more so than the usual occupants of a town window.

Many a small conservatory attached to town villas might be so furnished, and would amply repay the cultivator for the necessary expense of the change. The next point to be considered is the

Summer Management.—During the hot days of summer the plants would be greatly benefited by being set out in an open place in a garden on a bed of coal-ashes. There they would grow stout, and ripen their wood, and thus acquire strength to pass through the winter. Should the cultivator have no garden, then let him set out the plants (whenever a gentle shower is falling) on the flags, or any place handy; but do not expose them in a wind, or heavy storm. When in-doors, give them plenty of air; and water pretty freely, when the soil is dry. Some of the plants may require larger pots: in that case, repot them carefully, using plenty of drainage. The large growing Mesembryanthemums may require small tidy sticks to support them, and spread out the branches. Apply these so that they will be seen as little as possible. Some drooping kinds may be put in tiny baskets, and suspended from the top of the window. In such a situation, and so managed, they look very well.

Winter Management.—During this inclement season the plants should be kept rather dry. Frequently they will do better without water for months together, especially the small Cacti and Aloes. Though many of them are tolerably hardy, yet they are impatient of frost, and, therefore, must be kept from it. If the room or greenhouse has no artificial heat, the plants must be taken from near the glass, and put into a place where the frost cannot reach them. I cannot speak to a certainty whether gas—now so much used in dwellings—is injurious to them. Certainly, they will bear it better than any other tribe of plants. Dust is a great drawback on their health, and as they will not bear syringing in winter, a camel-hair brush should be used to clean off the dust. In my next, I will give the promised list.

T. APPLEBY.

(To be continued.)

MRS. LOUDON.

IN our last number we announced the death of this lady, and we will now proceed to give, with some few additions, marked by parentheses, what is really her autobiography; for she was so identified with all her husband's pursuits, owing to his decrepitude, that in sketching his life she at the same time has portrayed a very considerable portion of her own:—

"About this time (1829) Mr. Loudon formed his first acquaintance with me. My father (Thomas Webb, Esq., of Ritwell House, near Birmingham) died in 1824; and, finding on the winding up of his affairs that it would be necessary for me to do something for my support, I had written a strange, wild novel, called "The Mummy," in which I had laid the scene in the twenty-second century, and attempted to predict the state of improvement to which this country might possibly arrive. Mr. Loudon chanced to see the review of this book in the *Literary Gazette*, and, as among other things I had mentioned a steam-plough, it attracted his attention, and he procured the work from a circulating library. He read it, and was so much pleased with it, that he published, in "The Gardener's Magazine," for 1828, a notice of it under the head of "Hints for Improvements;" and he had from that time a great desire to become acquainted with the author, whom he supposed to be a man."

(These "Hints for Improvements," are as follows :—

"*New Ideas.*—In 'The Mummy,' a tale of the twenty-second century, an attempt is made to predestinate the application of steam, and other modern improvements, which, whether intended in the way of ridicule, or effect, it may not be altogether useless to notice. A patent steam mowing apparatus is set to work in a hay field, and the weather being foggy, the hay is dried with the use of a burning glass ! A field of barley, in a very dry state, is watered by the farmer, who, seeing 'a nice black, heavy-looking, cloud sailing by,' gets out his electrical machine, and draws it down in five minutes. Communications are held with every part of the world by means of telegraphs, and a private gentleman, whose son is engaged in battle in Germany, hears the result of an engagement a few minutes after it happens. A steam digging machine is mentioned ; cooking is effected by a chemical preparation, without the use of fire ; it is the fashion for great people to have only one dish, and fricasees and ragouts are only devoured by the *canaille* : beds are inflated with air instead of feathers ; house servants, of every description, are poets, artists, and philosophers ; water is turned into ice by mechanical pressure ; fog and vapour is turned into snow or rain at pleasure, by withdrawing electricity ; all travelling is performed in balloons ; the tour of the whole world can be made in six weeks ; and great people, finding it so very easy to be transported from one place to another, have left off travelling, and seldom leave their country seats. In a grand procession and ovation, celebrated in Black Heath Square, said to be the largest and finest square in the world, the air was thronged with balloons, and with a variety of aerial horses, bestrode by city dandies, whilst others floated upon wings, or glided along on aerial sledges. 'The throng of the balloons was very dense. Some young city apprentices, having each hired a pair of wings for the day, and not exactly knowing how to manage them, a dreadful tumult ensued, and the balloons became entangled with the winged heroes and each other in inextricable confusion. The noise now became tremendous ; the conductors of the balloons swearing at each other the most refined oaths, and the ladies screaming in concert. Several balloons were rent in the scuffle, and fell with tremendous force upon the earth ; whilst some cars were torn from the supporting ropes, and others roughly overset. Luckily, however, the whole of England was at this time so completely excavated, that falling upon the surface of the earth was like tumbling upon the parchment of an immense drum, and consequently, only a deep hollow sound was returned as cargo after cargo of the demolished balloons struck upon it ; some of them, indeed, rebounded several yards with the violence of the shock.'

"The country is governed by an absolute queen, who is 'full of wild-goose schemes.'—'Only imagine, Sir Ambrose, she showed me, this morning, a plan for making aerial bridges to convey heavy weights from one steeple to another ; a machine for stamping shoes and boots at one blow out of a solid piece of leather ; a steam-engine for milking cows ; and an elastic summer-house, that might be folded up so as to be put into a man's pocket !'

"Coal and other fuel having been long in disuse, smoke is unknown in London, and the English are the first sculptors in the world. The gardens of the nobility, who have town-houses, extend from the Strand to the Thames, and all of them are open to the public. Nothing in summer can be more enchanting than these gardens, filled with statues and beautiful originals ; in winter, the Thames 'was frozen, and persons glided along it in glittering *traineaux*, or skated gracefully with infinite variety of movement ; whilst every now and then a steam-percussion-moveable bridge shot across the stream, loaded with goods and passengers, collapsing again the instant its burden was safely landed on the other side.'

"There is a patent steam-book manufactory in Hatton Garden, where, also, quotations are cut, dried, and made up into pills for the use of authors. Every regiment, ship, and private family has its philosopher as well as its chaplain and surgeon. The government of England is an absolute monarchy ; Ireland and Scotland are separate kingdoms ; the Catholic religion is everywhere established ; the most enlightened part of society believe in ghosts and goblins, and the reason given is, 'because the extremes of ignorance and civilisation tend alike to produce credulity.'

"The most extravagant and impracticable ideas will some-

times aid in forming new and useful combinations ; and it is good to see the subject of scientific invention, and intellectual improvement, pushed to the extreme point, in order to show the absurdities to which everything human is liable to give rise.")

"In February, 1830, Mr. Loudon chanced to mention his wish (to know the author of 'The Mummy') to a lady, a friend of his, who happened to be acquainted with me, and who immediately invited him to a party, where she promised he should have the wished-for introduction. It may be easily supposed that he was surprised to find the author of the book a woman ; but I believe that from that evening he formed an attachment to me, and, in fact, we were married on the 14th of the following September.

"Immediately after our marriage, Mr. Loudon began to re-write 'The Encyclopædia of Gardening,' which was published in the course of the year 1831. On the 1st of October, 1830, he published the first part of a work, in atlas folio, entitled 'Illustrations of Landscape-Gardening and Garden Architecture ;' but, from the very expensive nature of the work, and the limited number of subscribers, he found it necessary to discontinue it, and it did not proceed beyond the third part, which appeared in 1833. In the beginning of the year 1831, he had an application to lay out a botanic garden at Birmingham, and he agreed to do it merely on the payment of his expenses. On this occasion I accompanied him ; and, after spending about six weeks in Birmingham (which, though it is my native town, I had not seen for several years), we made a tour through the North of England, visiting the lakes in Cumberland and Westmoreland. It was at Chester that we saw a copy of Mr. Paxton's 'Horticultural Register,' the first rival to 'The Gardener's Magazine,' which at the time we were married produced £750 a year ; but which gradually decreased from the appearance of 'The Horticultural Register,' till the period of Mr. Loudon's death, immediately after which it was given up.

"After visiting the beautiful scenery in Westmoreland and Cumberland, we passed through Carlisle, and entered Scotland by way of Longtown and Langholme. It happened that there was a fair at the latter place, and the town was so exceedingly full that they not only could not give us a bed, but we could not even find a place to sit down. We had a four-wheeled phaeton with only one horse, and, as we had travelled from Carlisle that day, the animal was very much tired ; it was also a serious annoyance to us, after having entered Scotland, to have to return twenty miles into England, as we were told we must do, Longtown being the nearest place where we were likely to obtain accommodation for the night. Fortunately for us, Mr. Loudon, having heard that Mr. Bell, who resided at Woodhouselee, only a few miles from Langholme, had a fine collection of American plants, determined to call there, and ask permission to see them. We did so ; and, when Mr. Bell heard how we were situated, he most hospitably insisted on our staying at Woodhouselee all night, though we were wholly strangers to him. The next day we proceeded through Gretna Green and Annan to Dumfries, in the neighbourhood of which we staid about three weeks, spending part of the time at Closeburn with Mr. Loudon's very kind friend Sir Charles Menteath, and part at Jardine Hall with Sir William and Lady Jardine. We afterwards staid at Munches and other seats in Dumfriesshire ; and when we entered Ayrshire, the county to which Mr. Loudon's family originally belonged, he was received with public dinners at Ayr and Kilmarnock. A public dinner was also preparing for him at Glasgow ; but while we were staying at Crosslee Cottage, near Paisley, the residence of Archibald Woodhouse, Esq., one of his most highly esteemed friends, he received a letter from Bayswater, informing him of the severe illness of his mother, and her earnest wish to see him. Mr. Loudon was warmly attached to his mother, and as, unfortunately, we did not receive the letter till late at night, for we had been dining in the neighbourhood, we did not go to bed, but packed up everything, so as to be able to set off with daylight the next morning for Glasgow, where we left Mr. Loudon's man with the horse and carriage, and proceeded to Edinburgh in the rain by coach, though we could only get outside places, and that Mr. Loudon had never ridden on the outside of a coach since his knee had become stiff, and he could not ascend the ladder without the greatest difficulty.

Nothing, however, could stop him in the performance of what he considered his duty; and, indeed, I believe his eagerness to see his mother overpowered every other feeling. It was also a singular circumstance, that, on his return to Edinburgh after an absence of nearly thirty years, he should be obliged to pass through it almost without stopping; yet such was the case, as we found on our arrival at the inn that a packet was just about to sail for London, and that if we did not avail ourselves of it we should be compelled to wait several days. We, therefore, hurried down to the pier; and, finding that the captain of the vessel was just going on board, we hired a boat, and were luckily in time to save our passage. We had a very quick voyage, and arrived at Bayswater about half an hour after the letter we had sent from Glasgow to announce that we were coming. Mr. Loudon's mother was so delighted to see her son, that she seemed partially to revive; so much, indeed, that we had hopes of her recovery. Nature, however, was too far exhausted, and she died about six weeks after our return, in October, 1831.

"In 1832, Mr. Loudon commenced his 'Encyclopædia of Cottage, Farm, and Villa Architecture,' which was the first work he ever published on his own account; and in which I was his sole amanuensis, though he had several draughtsmen. The labour that attended this work was immense; and for several months he and I used to sit up the greater part of every night, never having more than four hours' sleep, and drinking strong coffee to keep ourselves awake. The 'First Additional Supplement' to the 'Hortus Britannicus' was also prepared and published in 1832.

"The great success of the 'Cottage Architecture,' which is, perhaps, the best and most useful of all Mr. Loudon's works, tempted him to publish the 'Arboretum Britannicum' also on his own account. He had long intended to write a work on the hardy trees of Great Britain; but he did not contemplate the expenses which he should incur by so doing. When, however, the 'Arboretum' was once begun, he found it was impossible to compress it into the limits originally intended; and, in his determination to make the work as perfect as possible, he involved himself in the difficulties which hastened his death. Notwithstanding the immense labour attending the 'Arboretum,' which was published in monthly numbers, Mr. Loudon, in March, 1834, began 'The Architectural Magazine,' the first periodical devoted exclusively to architecture; though, like 'The Magazine of Natural History,' and 'The Gardener's Magazine,' it only served as a pioneer to clear the way for others, which afterwards followed in the same course with much greater success.

"From the year 1833, to Midsummer, 1838, Mr. Loudon underwent the most extraordinary exertions both of mind and body. Having resolved that all the drawings of trees for the 'Arboretum' should be made from nature, he had seven artists constantly employed, and he was frequently in the open air with them from his breakfast at seven in the morning till he came home to dinner at eight in the evening, having remained the whole of that time without taking the slightest refreshment, and generally without even sitting down. After dinner he resumed the literary part of the work, and continued writing, with me as his amanuensis, till two or three o'clock in the morning. His constitution was naturally very strong; but it was impossible for any human powers to bear for any lengthened period the fatigue he underwent. In 1836, he began 'The Suburban Gardener,' which was also published in monthly numbers, so that he had five monthly works going on at the same time. He soon found, however, that three monthly works, besides the 'Arboretum,' were as much as his health would permit him to undertake the management of, and he disposed of 'The Magazine of Natural History,' to Mr. Charlesworth. In 1838, he also gave up the 'Architectural Magazine,' and at Midsummer in that year he finished the 'Arboretum Britannicum.' He was now in circumstances that would have discouraged almost any person but himself. His health was very seriously injured, partly by what was supposed to be a liver complaint, and partly by an enormous swelling in his right knee, which some of the most eminent medical men in London supposed to be produced by a disease in the bone. In addition to the large sums in ready money he had paid to the artists and other persons employed during the progress of the 'Arboretum,' he found at its conclusion that he owed ten thousand pounds to the printer, the stationer,

and the wood-engraver, who had been employed on that work. His creditors, however, did not press him for their money, but gave him a chance of reaping the benefit of his labours at some future time, by consenting to wait till they were paid by the sale of the 'Arboretum,' and the 'Cottage Architecture,' upon condition that he placed these works in the hands of Messrs. Longman, to hold for the creditors till the debt was paid.

"Notwithstanding the state of his knee, which was now such that he was unable to walk without assistance, immediately on the completion of the 'Arboretum' he arranged and published his 'Hortus Lignosus Londinensis'; and in the last number of 'The Suburban Gardener,' which was finished about this time, he informed the public that he intended to resume his profession of landscape-gardener, and that he would not only go out, but give advice at home, on any plans that might be sent to him. To us, who saw the state of his health, this intimation gave the greatest pain, and we determined to do everything in our power to prevent the necessity of his exerting himself. Two of his sisters learned wood-engraving; and I, having acquired some knowledge of plants and gardens during the eight years I had acted as his amanuensis, began to write books on those subjects myself. In the mean time, he grew so much worse, that we had very little hope of his recovery, till he placed himself under the care of William Lawrence, Esq.; when that eminent surgeon took a different view of the case from what had been before entertained, and by his mode of treatment rapidly restored him to health.

"In 1839, Mr. Loudon began to lay out the Arboretum, so nobly presented by the late Joseph Strutt, Esq., to the town of Derby. In the same year he published his edition of 'Repton,' and his 'Second Additional Supplement to the 'Hortus Britannicus.' In 1840, he accepted the editorship of 'The Gardener's Gazette,' which, however, he only retained about a year.

"In 1840, Mr. Loudon, having a great desire to examine some of the trees in the *Jardin des Plantes*, in order to identify some of the species of *Cratægus*, went to Paris; and, as his health was beginning again to decline, I went with him, taking with me our little daughter, Agnes, who, from this time, was always the companion of our journeys. We went by way of Brighton, Dieppe, and Rouen, to Paris, ascending the Seine; and we remained in France about two months.

"When Mr. Loudon left Scotland so abruptly in 1831, he promised his friends to return the following year, and, indeed, fully intended to do so; but various circumstances occurred to prevent him, and it was not till 1841, that he was able to fulfil his engagement. In the summer of that year, however, soon after the publication of the 'Supplement to the Encyclopædia of Plants,' Mr. Loudon, Agnes, and myself, went from London to Derby, and, after spending a few days with our kind and excellent friend, Mr. Strutt, we proceeded through Leeds to Manchester. It rained heavily when we arrived at Leeds; but, Mr. Loudon having determined to visit the Botanic Garden, we went there in a most awful thunder-storm, and the whole of the time we were in the garden the rain descended in torrents. We were all wet, and we had no time to change our clothes, as on our return to the station, we found the last train to Manchester ready to start, and Mr. Loudon was most anxious to proceed thither without delay. When we arrived at Manchester, he was far from well; but notwithstanding, the next morning, though it still rained heavily, he insisted upon going to the Botanic Garden. Here he increased his cold, and when he returned to the inn he was obliged to go to bed. The next morning, however, he would go on to Liverpool; and, though he was so ill there that when we drove to the Botanic Garden he was unable to get out of the coach, and was obliged to send me to look at some plants he wished to have examined, he would sail for Scotland that night. He was very ill during the voyage, and when we landed at Greenock, he was in a high fever. He persisted, however, in going by the railway to Paisley, and thence to Crosslee Cottage, where we had promised to spend a few days with our kind friends Mr. and Mrs. Woodhouse. When we arrived there, however, he was obliged instantly to go to bed. A doctor was sent for, who pronounced his disease to be a bilious fever, and for some time his life appeared in great danger.

"It was six weeks before he could leave his bed; but as soon as he was able to sit up he became anxious to resume his labours; and, taking leave of our kind friends, we set out on a tour through the South of Scotland, visiting every garden of consequence on our route, and making notes of all we saw. Notwithstanding all he had suffered during his severe illness, and the state of weakness to which he was reduced, he exerted himself to see everything; and he was never deterred, either by fatigue or wet weather, from visiting every garden that he heard contained anything interesting. After travelling about a fortnight, we reached Edinburgh, but Mr. Loudon only staid one night; and, leaving Agnes and me there, he proceeded on the 13th of August alone to Glasgow, on his road to Stranraer, where he was going to lay out the grounds at Castle Kennedy, for the Earl of Stair.

"On the 1st of September he returned to Edinburgh, which of course he found greatly changed since he had resided there thirty-seven years before; and for the next fortnight he had great pleasure in showing me the places he had known when a boy. On the 13th of September, having hired a carriage at Edinburgh, we set out on our return home by land; and at Newcastle we spent two or three days with our friends Mr. and Mrs. Sopwith, where Mr. Loudon was highly gratified with the arrangement of Mr. Sopwith's library, which we found a perfect temple of order.

"On leaving Newcastle, we travelled through Chester-le-street to Durham, visiting nearly all the fine places in that county, particularly Raby Castle; and afterwards we proceeded to Darlington, where we took the railroad to York. We stayed three or four days in this city, and then we returned to London by the railroad.

"In December, 1841, appeared the first number of the 'Encyclopædia of Trees and Shrubs,' the work consisting of ten monthly numbers. The abridgement of the 'Hortus Lignosus Londinensis' was published immediately on the conclusion of the 'Encyclopædia of Trees and Shrubs;' and in May, 1842, appeared the 'First Additional Supplement to the Encyclopædia of Cottage Architecture.'

"In addition to the works which have been enumerated, Mr. Loudon contributed to several others, such as the 'Encyclopædia of Domestic Economy,' and 'Brande's Dictionary of Science, Literature, and Art.' He also wrote the article 'Planting,' for the new edition of the 'Encyclopædia Britannica.'

"Early in March, 1842, he had an attack of inflammation of the lungs, and, on his recovery, we went down to Brighton for some weeks. We afterwards made a tour through Somersetshire, Devonshire, and part of Cornwall; and, on our return to Exeter, Mr. Loudon went to Barnstaple, in the neighbourhood of which he was about to lay out some grounds for Lord Clinton, sending Agnes and myself back to London. When he returned home, I noticed that he had a slight cough; but, as it was trifling, it did not make me uneasy, particularly as his spirits were good. He now finished his 'Suburban Horticulturist,' which had been begun two years before, but had been stopped on account of his illness in Scotland; and this work was published by Mr. Smith, of Fleet Street, all his other works, from the appearance of the 'Encyclopædia of Gardening,' having been published by Messrs. Longman.

"In 1843, his time was chiefly occupied by his work on 'Cemeteries,' with which he took extraordinary pains, and which was very expensive from the number of the engravings. In August, we were invited to Derby to pay another visit to Mr. Strutt, but he was too ill to go, and the doctors pronounced his complaint to be a second attack of inflammation of the lungs.

"Previously to Mr. Loudon's illness, I had agreed to write a little book on the Isle of Wight, and to visit it for this purpose. This arrangement I now wished to give up; but his medical men advised us to go, as they thought the air of the Isle of Wight might re-establish his health. Strange to say, up to the time of our leaving home I had no idea that his illness was at all dangerous; but the fact was, I had seen him recover so often when everyone thought he was dying, that I had become accustomed to place little reliance on what was said of his attacks by others. When we reached the Isle of Wight, however, I was struck with a degree of listlessness and want of energy about him that I had never seen before. He became rapidly worse while we were in the island, and

most eager to leave it. On our arrival at Southampton, where he was laying out a cemetery, he felt better; and, taking a lodging there, he sent Agnes and myself back to town. In a fortnight I went down to see him, and I shall never forget the change I found in him. The first look told me he was dying. His energy of mind had now returned. He not only attended to the laying out of the cemetery at Southampton, but, during his stay in that town, he corrected the proofs of the second 'Supplement' to his 'Encyclopædia of Agriculture,' and then went alone to Bath, in spite of my earnest entreaties to be permitted to accompany him. At Bath he inspected the ground for another cemetery, and also the grounds of a gentleman named Pinder, though he was obliged to be wheeled about in a Bath chair. He then went, still alone, to Kiddington, the seat of Mortimer Ricardo, Esq., near Enstone, in Oxfordshire, where he was also obliged to be wheeled round the grounds in a chair. When about to leave Kiddington he appeared so ill, that Mr. Ricardo offered to send a servant with him to town.

"He returned to Bayswater on the 30th of September, 1843, and at last consented to call in medical aid, though he was by no means aware of his dangerous state. He supposed, indeed, that the pain he felt, which was on the right side, proceeded from an affection of the liver; as both times, when he had inflammation of the lungs, the pain was on the left side. On the 2nd of October I went with him to call on Mr. Lawrence, in whom he had the greatest confidence; and that gentleman told him without hesitation that his disease was in his lungs. He was then evidently very much struck at this announcement, but as he had the fullest reliance on Mr. Lawrence's judgment, he was instantly convinced that he was right; and, I think, from that moment he had no hope of his ultimate recovery, though, in compliance with the wishes of different friends, he afterwards consulted several other eminent medical men, of whom Dr. Chambers and Mr. Richardson attended him to the last.

"As soon as Mr. Loudon found that his disease was likely to prove fatal, he determined, if possible, to finish the works he had in hand, and he laboured almost night and day to do so. He first, with the assistance of his draughtsman, finished a plan for Baron Rothschild; then one for Mr. Ricardo, another for Mr. Pinder, and, finally, a plan for the cemetery at Bath. He had also engaged to make some additional alterations in the grounds of Mr. Fuller at Streatham, and he went there on the 11th of October, but he was unable to go into the garden; and this was the last time he ever attempted to visit any place professionally. He continued, however, to walk in the open air in his own garden, and in the grounds of Mr. Hopgood, nurseryman, at Craven Hill, for two or three days longer, though his strength was fast decreasing; and after the 16th of October, he did not leave the house, but confined himself to his bed-room and a drawing-room on the same floor. Nothing could be more awful than to watch him during the few weeks that yet remained of his life. His body was rapidly wasting away; but his mind remained in all its vigour, and he scarcely allowed himself any rest in his eagerness to complete the works that he had in hand. He was particularly anxious to finish his 'Self-Instruction for Young Gardeners,' which is published nearly in the state he left it, though had he lived it would probably have been carried to a much greater extent. About the middle of November, the medical men who attended my poor husband, pronounced his disease to have become chronic bronchitis; and this information, combined with the pressure of pecuniary difficulties, had a powerful effect upon him. He now made an effort that can only be estimated by those who know the natural independence of his mind, and the pain it gave him to ask even a trifling favour. He wrote a letter stating his situation, and that the sale of 350 copies of the 'Arboretum' would free him from all his embarrassments. This letter he had lithographed, and he sent copies of it to all the nobility who took an interest in gardening. The result was most gratifying. The letter was only dated the 1st of December, and he died on the 14th of that month; and yet in that short space of time the noblemen he appealed to, with that kindness which always distinguishes the English aristocracy, purchased books to the amount of £360. Mr. Loudon had intended to forward similar letters to all the landed proprietors and capitalists; and, though only a few were sent, they were responded to

with equal kindness. Our munificent and noble-minded friend, Joseph Strutt, Esq., took ten copies; and letters from two of our kindest friends (William Spence, Esq., and Robert Chambers, Esq.), ordering copies of the 'Arboretum,' arrived the very day he died.

"This appeal was principally rendered necessary by the pecuniary difficulties I have alluded to, and which, undoubtedly, hastened his death. The debt on the 'Arboretum,' which, as already stated, was originally £10,000, had, by the sale of that book and of the 'Cottage Architecture,' been reduced to £2,400; but he had incurred an additional debt of £1,200 by publishing the 'Encyclopædia of Trees and Shrubs,' his edition of 'Repton,' and other works on his own account, though all his creditors agreed to the same terms, viz., to wait for their money until they were paid by the sale of the works themselves, on condition of Messrs. Longman holding the stock of books in trust, and not paying any of the proceeds of the work to Mr. Loudon till the demands of his creditors were fully satisfied. Unfortunately, however, one of the creditors, the engraver, became a bankrupt, and his assignees began to harass Mr. Loudon for the debt due to them, which was about £1,500, threatening to make him a bankrupt, to arrest him for the sum, &c. I believe they could not have carried their threats into execution without the consent of Mr. Spottiswoode, and Messrs. Smith and Chapman, who were the other creditors, and who behaved most kindly and honourably throughout. But the agitation attendant on the numerous letters and consultations respecting this affair proved fatal to my poor husband.

"On Wednesday, the 13th of December, 1843, he sent me to London to see the assignees, and to endeavour to bring them to terms, our kind and excellent friend, the late Mr. Joseph Strutt, having promised to lend us money for that purpose. The assignees, however, refused to accept the terms we offered, unless Mr. Loudon would also give up to them his edition of 'Repton,' which he was most unwilling to do, as the debt on that work was comparatively small; and, consequently, he had reason to hope that the income produced by it would be soonest available for the support of his family. He was accordingly very much agitated when I told him the result of my mission; but he did not, on that account, relax in his exertions; on the contrary, he continued dictating 'Self-Instruction' till twelve o'clock at night. When he went to bed he could not sleep, and the next morning he rose before it was light. He then told me that he had determined to sacrifice his edition of 'Repton' in order to have his affairs settled before he died; adding, 'but it will break my heart to do so.' He repeated, however, that he would make the sacrifice, but he seemed reluctant to send me into town to give his consent; and most fortunate was it, as, if I had gone to town that morning, I should not have been with him when he died. He now appeared very ill, and told me he thought he should never live to finish 'Self-Instruction;' but that he would ask his friend, Dr. Jamieson, to whom he had previously spoken on the subject, to finish the work for him. Soon after this he became very restless, and walked several times from the drawing-room to his bed-room and back again. I feel that I cannot continue these melancholy details: it is sufficient to say, that though his body became weaker every moment, his mind retained all its vigour to the last, and that he died standing on his feet. Fortunately, I perceived a change taking place in his countenance, and I had just time to clasp my arms around him, to save him from falling, when his head sank upon my shoulder, and he was no more.

"I do not attempt to give any description of the talents or character of my late husband as an author; his works are before the world, and by them he will be judged; but I trust I may be excused for adding, that in his private capacity he was equally estimable as a husband and a father, and as a master and a friend. He was also a most dutiful son and most affectionate brother.

"It was on the anniversary of the death of Washington (the 14th of December) that Mr. Loudon died, and he was buried on the 21st of December, in the cemetery at Kensall Green. When the coffin was lowered into the grave, a stranger stepped forward from the crowd and threw in a few strips of Ivy. This person, I was afterwards informed, was an artificial flower maker, who felt grateful to Mr. Loudon for having given him, though a stranger, tickets for admission to the Horti-

cultural Gardens, and who, never having been able to thank Mr. Loudon in person, took this means of paying a tribute to his memory."

The compilations made by herself, by which Mrs. Loudon is most known to the public, are entitled—"The Lady's Flower-Garden;" "The Lady's Country Companion;" "Gardening for Ladies;" "British Wild Flowers;" and "The Lady's Companion to the Flower Garden." The last-mentioned work has had a circulation of more than 20,000 copies. It may be added that her tastes are inherited by Miss Agnes Loudon, her only daughter, who is the authoress of several children's books, and various tales and sketches. Mrs. Loudon was in the enjoyment of a pension of £100 per annum from the Civil List, granted to her in recognition of the literary services rendered by herself and husband.

NOTES ON THE DEVELOPMENT OF BULBS AND TUBERS.

By THILO IRMISCH.

(Abridged from the German original.)

I. LILIACEOUS PLANTS.

Allium ursinum, L.

THE slender bulb of this plant, when the fruit is ripe, presents the following structure:—At its base is the axal portion of the last year's plant, which is now very short, and which, like the few fibres which still adhere to it, is quite dead (Fig. 1, a). Very rarely two new bulbs adhere to the old axis. The young filiform roots, which are but slightly branched, and are sprinkled with delicate hairs, spring from the base of this year's axis, perforating the lower part of the bulb.

The bulb is surrounded by a single row of bristle-shaped short threads (Fig. 1, e) without any dry skins. The outer portion is at this time formed of the white membranaceous transparent sheaths of the outer or lower leaf (Fig. 1, d), which is of some height, and from whose contracted orifice the flower-stem (e) and the petiole of the second leaf (f) protrude. If the position of the lamina of this outer leaf with respect to its sheath be accurately examined, it appears that that surface (β), which, on account of the brightness of its cuticle and its peculiar form, is to all appearance the upper surface, is turned from the aperture of the sheath, while in other plants it is turned towards it; whereas the surface, which, to judge from the dull aspect of the cuticle, the keel-like projection of the midrib, as well as the margins which are somewhat rolled back towards the tip, and the arching back of the tip itself, is the under surface, forms, apparently, the continuation of the inner surface of the sheath, produced by the petiole. On this side there are abundant stomata, whereas those on the other side are few in number. There the walls of the cells are undulated, here quite straight. This irregularity, however, vanishes on closer inspection; for then it appears that the true upper surface has assumed all the peculiarities of the lower surface, the dull aspect of the cuticle, &c., while the real lower surface has the usual brilliancy, &c., of the upper surface; and this takes place with various modifications, sometimes merely from a bending forward of the leaf so as to expose the under surface to the influence of light, and sometimes from various degrees of torsion of the petiole.

The second leaf (f), which projects from the sheath of the first, exhibits the same phenomena. It does not, however, by any means surround the flower-stem with its sheath, but it stands in the axil which the first leaf makes with it, and is turned with its external surface (Figs. 2, 3) to the peduncle, and with the other side (δ) to the medial line of the first leaf. It belongs, therefore, to a lateral axis; the back of its sheath, which is far shorter than that of the first leaf, is thick and fleshy (Fig. 3): the front is far less so. The bore of the sheath is extremely narrow, since the dorsal and frontal portion rest on each other, and it appears in a transverse section (Fig. 4, e) as a curved fissure whose convex side is directed forwards. At the bottom of this cavity a little bud (Fig. 3, g) is found. The form of the bulb is derived from this sheath, since that of the first leaf, in consequence of its membranaceous substance, adds little to the thickness.

After flowering the leaves quickly fade; the first leaf by

autumn is completely gone, so as to leave not even a vestige of the sheath. Such is the case also with the peduncle. The second leaf perishes only as far as the commencement of the sheath, leaving there a roundish scar. The sheath itself remains fresh and fleshy. In autumn the vegetation of this bulb awakes, which had been dormant through the summer; it sends out from its base through the fleshy sheath filiform roots, one of which frequently ascends through its bore, and makes its way through the aperture above. The before-mentioned bud begins to elongate, and in November has frequently reached half the height of the sheath. Its outer part is a membranaceous sheath whose aperture is at the apex. It alternates with the sheath which encloses it. After its removal either a second similar sheath appears, or, what is more frequent, a still tender leaf, the closed sheath of which is very evident. The margins of its lamina are rolled inwards, and the medial nerve is very strong and broad on its upper surface; near it on either side the involute margin. On the under side, on the contrary, the nerve does not project. The leaves of *Alstrœmeria Pelegrina* and other species of the genus, in which the under side is smooth, and the upper marked with many raised nerves, alternately higher and lower, exhibit the same phases. The proper under surface becomes the upper surface by means of the twisting of the lamina. From the sheath of this first leaf the very short flower-stem projects: it bears at its apex two bracts, of which the outer alternates with the first leaf, the inner stands opposite to it. Both at a later period become connate and form the involucre. In the axil of the first a second but smaller leaf is found, which is turned with its back towards the stem.

In spring, when the sheath, which is two to three inches long, and the two leaves (the second of which expands somewhat later than the first) and the flower-stem spring forth, in which the leaves undergo the above-mentioned bending and twisting, the fleshy sheath, which remained from the second leaf of the foregoing year, is gradually absorbed, so that nothing remains except the bundles of vessels by which they were threaded; hence arise the bristles which were mentioned above. The sheath also which originally surrounded the bud equally perishes. The following is the result of the foregoing remarks:—

I.—The two leaves, which exist at the time of flowering and some time later, belong to two different axes; the outer to this year's basal axis which is terminated by the flower-stem, the inner to the lateral axis which proceeds from the angle which the outer leaf forms with the peduncle, and which in the following year is terminated by it.

II.—The leaves on the lateral axis (which next year becomes with reference to the new bud the primary axis) are arranged as follows:—

1. The inner leaf (f), whose sheath forms the true bulb or reservoir of nutriment when the lamina dies. It is the outermost or lowest of its own axis.

2. One (seldom two) membranaceous sheaths.

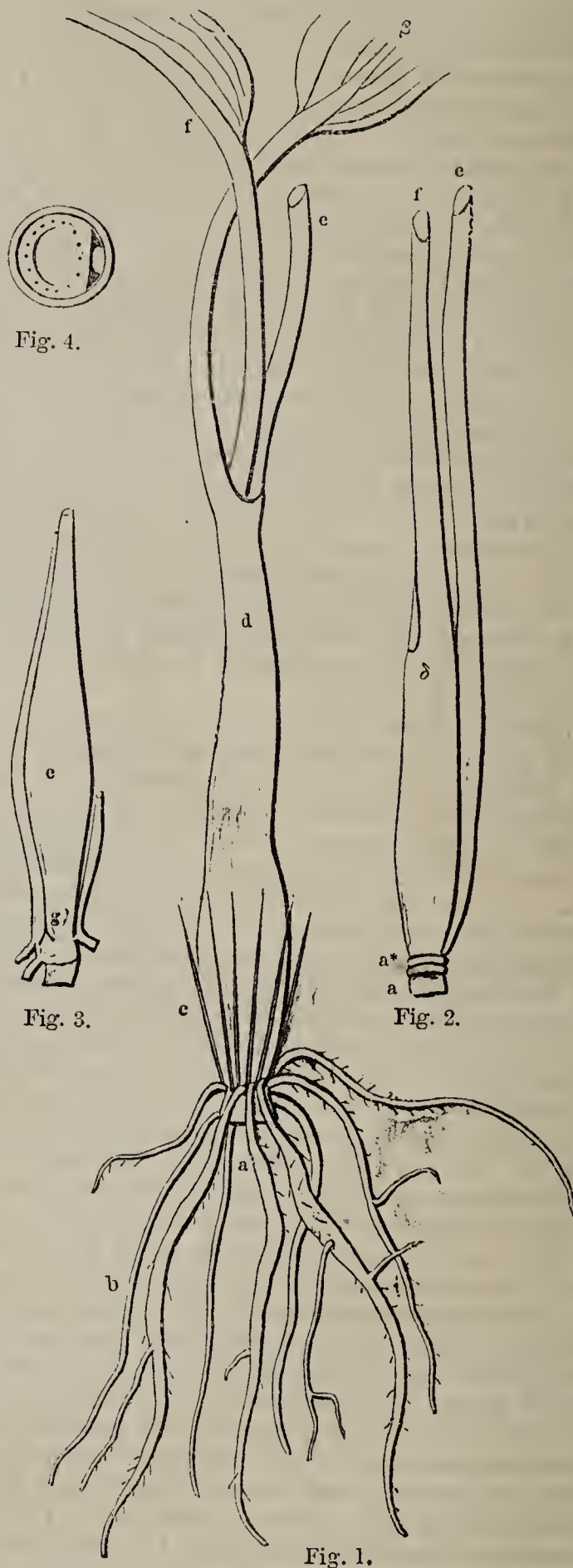
3. Another leaf (d) which surrounds the flower-stem with its sheath, and, after the fruit is formed, entirely vanishes, and with which the outer leaf of the involucre alternates. This leaf is highest and innermost of its axis. It becomes external, however, by the previous destruction of the one or two outer sheaths.

III.—It is remarkable, that the first or lowest leaf in this lateral axis is a perfect leaf, and that its evolution takes place at a different period of vegetation from that of the other leaf of the same axis.

In plants which do not blossom there is normally but one leaf, whose sheath equally becomes a reservoir, while the lamina withers, and with it a sheath alternates: this is followed next year by a leaf with a fleshy sheath. Whereas the principal bud in the flowering plant is axillary, it is terminal in non-flowering individuals, and the leaves formed at their summit always belong to one and the same axis.

A bud is rarely found in the axil of the sheath. The multiplication of the plant by bulbs is rare, and seeds are, therefore, produced the more abundantly. It begins to sprout in the beginning of April. The seedling plant consists of the cotyledonal leaf, which is firmly fixed by the process answering to the lamina within the seed; a membranaceous sheath, a leaf which encloses a little bud in its fleshy sheath, and which is, with the exception of the cotyledon, in whose place

we find in older examples the sheathing base, constructed exactly like the older but not yet flowering specimens. The cotyledon and sheath, as well as the lamina of the leaf, soon die and vanish.



Allium ursinum.

Fig. 1. Perfect plant when the fruit is ripe.

- a. old withered axis.
- b. dead roots.
- c. bristles at the base of bulb.
- d. sheath of first leaf.
- e. peduncle.
- f. second leaf.
- g. real lower surface of first leaf.

Fig. 2. The same, with the sheath of the first leaf removed.

- a. old axis.
- a*. new axis.
- c. peduncle.
- f. petiole of second leaf.
- g. orifice of its sheath.

Fig. 3. Vertical section of Fig. 2.

- c. bore of peduncle.
- g. bud at its base.

Fig. 4. Transverse section of (d) in Fig. 1.

Tulipa Gesneriana, L. (Garden Tulip.)

When a fertile bulb is examined towards the end of autumn, the following appearances are presented. It is generally surrounded by a thin brown skin, on the removal of which the dry, brown peduncle of the past season appears, furnished at

its base with the withered roots (Fig. 1, a). Between it and the fresh bulb a thin, dry, brown skin (b) is found, which is frequently lacerated both at its base and at the upper margin. This is clothed with long shining hairs on its inner surface, especially at the base, where it is connected with that of the dry peduncle.

At the base of the new bulb, on the side which is turned away from the old flower-stem, the first rudiments of the roots appear, in the shape of little swellings disposed in a semicircle, whose open side is towards the stem. In most species of *Allium* the roots form a circle on the bulb.

The fresh bulb is commonly formed of four (Fig. 2, c), or more rarely of five, fleshy sheaths, with a rather narrow orifice. They are disposed spirally, the innermost being the shortest. In the axil of the inmost sheath which incloses the base of the flower-stem (g) is situated the minute new prin-

cipal bulb (Fig. 2, h), the back of whose outer leaf is next to the flower-stem. In a vertical section through all the parts of the bulb we see that the young roots (Fig. 2, i) are formed on the same side as that on which the young bulb is seated, and that this is on the side of the fresh flower-stem which is turned away from the dried peduncle (a) of the former year. Therefore, as in *Gagea lutea*, each successive plant is behind that of the previous season. The evolution of the roots is so far peculiar, that the part of the base of the axis, between the dry sheath (b) which is clothed on the inner side with hairs, and the first fresh sheath protrudes under the place where the young bulb is seated, and that on the inner side of this portion of the axis the numerous roots burst out without perforating the new sheath.

While the roots are elongating, the contents of the fleshy sheaths, especially on their inner side, are absorbed; the flower-stem is extended, and the young bulb increases, and at the time of flowering, in spring, is proportionally large (Fig. 3, h). If it is then examined, we find that the outer sheath is clothed on the inner side with distinct diaphanous inarticulate hairs, about a line long, especially where it forms two angles towards the peduncle, and at the base. This sheath, or abortive leaf, is rather thin, and soon after the plant has blossomed, when the inner sheaths always thicken and become more fleshy, is entirely dried up to a thin skin, like the sheaths belonging to the base of the axis of the now withered peduncle. Besides the principal bulb, accessory bulbs also occur, whose first leaf is likewise hairy on the inner side in the axils of the first sheath, and of the fleshy ones which lie within it, as also offsets. The bulb in the axil of the penultimate sheath frequently flowers in the same year with the principal bulb; the others at a later period.

On the short, tolerably broad, basal axis we often find five sheaths, the lowest dried, the inmost serving as magazines of nutriment. The bulbs of Tulips differ from those of most species of *Allium*, and the genus *Gagea*, in that sheaths only spring from the basal axis, and not leaves. It agrees with many species of *Allium*, as, for instance, *A. Scorodoprasum*, in that the outermost sheath is soon dried up, but no such membranaceous sheath is found in the Garden Tulip, as follows the thickened sheaths in the above-mentioned species.

(To be continued.)

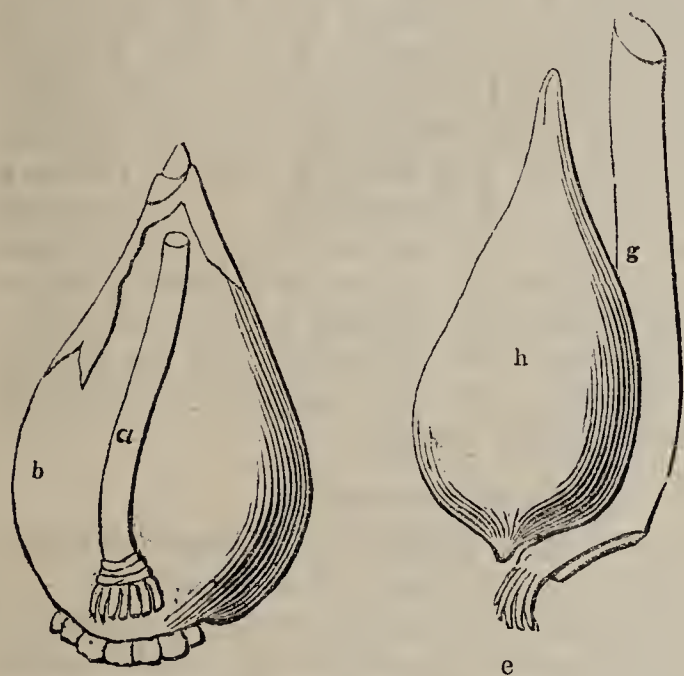


Fig. 1.

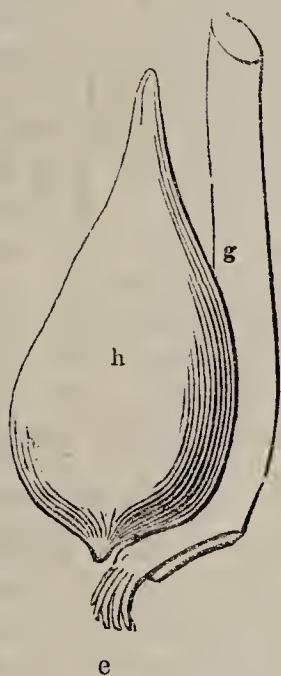


Fig. 3.

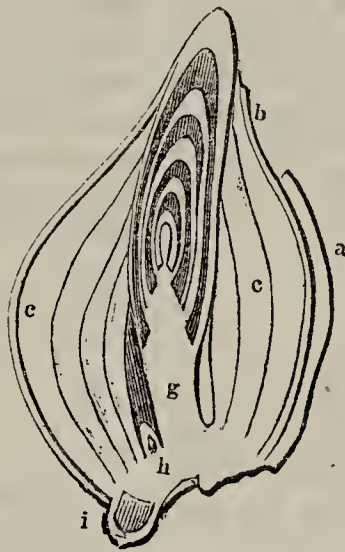


Fig. 2.

Tulipa Gesneriana.

Fig. 1. Bulb at the end of autumn.

a. old peduncle.
b. dry brown skin.

Fig. 2. Section of ripe bulb.

a. old peduncle.
b. dry skin.
c, c. sheaths of which the bulb is composed.
g. base of flower-stem.

h. new principal bud, which produces the bulb of the following year.

i. roots still enclosed.

Fig. 3. Young bulb in spring; all the coats, c c, in Fig. 2 having been removed.

c. roots.
g. flower-stem.
h. new bulb.

BROMPTON AND QUEEN STOCKS—CAUSE OF DOUBLE FLOWERS.

I QUITE concur with "T. A.," in the result of his experience, with respect to one-year-old seeds producing more double flowers than new seeds. This "T. A." declares to be a fact, though he expresses his inability to say, why there is a larger number of double flowers in old seeds than in new ones. On referring to Vol. V. of "Chambers's Edinburgh Journal," page 368, he will find that the cause of double flowers has been explained in the *Revue Horticole*, on a rather curious and interesting principle. As the information conveyed by the article is of importance, and will doubtless be considered interesting by "T. A.," and many of your readers, I extract it at full length from the journal referred to, under an expectation that you will think it of sufficient interest to warrant its insertion in connection with the present subject. The article is as follows:—

"It is impossible for any inquiring mind not to attempt an explanation of the fact, that many plants which, in a state of nature, never present more than a single row of petals, begin to assume several rows under continued cultivation. The effects of a richer soil, and other genial circumstances, or the mere accident of double petals in one plant, transmitted with improvement through its progeny, are the common explanations; and they are generally received as satisfactory, without reflecting that what we call accident is itself a result of some cause, and that change of condition must attack some

physiological principle before it can have any effect in modifying the character of a plant. Nothing is now so common as double flowers; and 'to explain the phenomenon,' says the *Revue*, 'we must make practice agree with theory.' Every gardener who sows seed wishes to obtain plants with double flowers, so as to have blossoms which produce the greatest effect. Every double flower is a monstrous vegetable. To produce this anomaly, we must attack the principle of its creation—that is to say, the seed. This being granted, let us examine in what way these seeds ought to be treated. If, after having gathered the seeds of *Ten-weeks'* Stock, for example, we sow them immediately, the greater number of the seedlings will produce single flowers; whilst, on the contrary, if we preserve these same seeds for three or four years, and sow them, we shall find double flowers upon nearly all the plants. To explain this phenomenon, we say, that in keeping a seed for several years we fatigue and weaken it, so that the energy, which would otherwise have been expended in producing stamens, produces petals. Then, when we place it in a suitable soil, we change its natural state, and from a wild plant make it a cultivated one. What proves our position is, that plants in their wild state, shedding their seeds annually, and sowing them as soon as they fall to the ground, yet in a long succession of time scarcely ever produce plants with double flowers. We think, then, after what we have

said, that whenever a gardener wishes to obtain double flowers, he ought not to sow the seeds till after having kept them for as long a time as possible. These principles are equally applicable to Melons, and all plants of that family. We admit, like many observers, that Melon plants, obtained from seeds the preceding year, ought to produce, and do produce, really very vigorous shoots, with much foliage; but very few fruitful flowers appear on such plants; whilst, on the other hand, when we sow old seed, we obtain an abundance of very large fruit. In fact, in all varieties of the Melon, the seeds should always be kept from three to eight years before being sown, if we would obtain fine fruit and plenty of it."

So many false theories have not only been advanced, but believed, in apparent explanation of the causes of double flowers, that it is satisfactory to find a reason alleged, apparently so likely and well grounded, as that of the *Revue Horticole*, and I shall be glad if the principle so set forth, be considered correct by you or your readers, so many of whom, including "T. A.," are capable of judging of its correctness or inaccuracy. —T. S., *South Shields*.

[We are obliged by the extract, but it only states the long-acknowledged fact, that old seeds have a tendency to produce flowers more freely than new seeds. *Why* old seeds do so is not explained. It is mere disguising ignorance under verbiage, to say that the seeds do so because they are "fatigued or weakened." Many plants and fruit trees will not produce blossom unless sustained in extreme vigour.—ED.]

POMOLOGICAL SOCIETY'S MEETING.

AN Ordinary Meeting of the BRITISH POMOLOGICAL SOCIETY was held at St. Martin's Hall, Long Acre, on Thursday, the 22nd inst., Mr. GEORGE PAUL, in the chair.

J. J. BLANDY, Esq., V.P.H.S., High Grove, Reading;

Rev. JNO. FREEMAN, Ashwicken Rectory, Lynn, Norfolk;

T. W. GUNTER, Esq., 28, Beaufoy Terrace, Kilburn;

Mr. JOHN FLEMING, gardener to his Grace the Duke of Sutherland, Clevedon, near Maidenhead;

Mr. JOHN MILNE, Vauxhall Nursery, London; were elected Members of the Society.

This was the day on which premiums were offered, in competition, for the *Best Seedling Early Dessert Pear*, and the *Best Seedling Early Apricot*. But, as none were brought forward, it was considered desirable that an announcement should be made, calculated to induce growers to make such experiments as shall be likely to result in the producing such improved kinds of fruits, as the Society is desirous of instigating and encouraging. It was resolved, therefore—

"That all prizes offered for new Seedling improvements on existing kinds of fruits, if not taken this year, shall be announced as open for competition at, or about, the same time next year, and in subsequent years, until such varieties be brought before the public as shall be thought worthy of the Society's commendation, with a view to encourage growers to make useful experiments."

With a view to obtaining such information as shall enable the Society to pronounce on the correct nomenclature of the Black Cherries brought before the last Meeting, it was resolved—

"That, at the first Meeting in July, next year, growers be invited, by advertisement, to send examples of the varieties of Cherries they grow,—as *Black Circassian* and *Black Tartarian*,—and to state any difference, as to habit of growth, between the two kinds, where they are considered distinct."

STRAWBERRIES.

Mr. JAS. CUTHILL, of Camberwell, sent a quantity of fruit of the variety he has sent out as CUTHILL'S PRINCE OF WALES, stating that he began gathering from the plants, from which they were produced, on the 28th of May; that he has been gathering ever since; and, by the unripe fruit in the various stages from the same plants, as well as from the flower-stems which they continued throwing up, he argued, that the kind promised special merit as a very early and very late Strawberry. He stated further, that he had planted *Elton* and other late kinds in the same beds, and that their crop was over, his locality being a very early one. With regard to productiveness, he stated that he had counted over 200 fruit on one two-year-old plant. He described it as a seedling from *Black Prince*, and believed it to have been the result of impregnation by *British Queen*. The fruit is small in size, obtusely conical, light red in colour, and thickly studded with rather large seeds; the flesh is tolerably firm, moderately juicy, and void of flavour, unless a roughish acid can be so considered. The Meeting were of opinion that the *Alpine* was its more probable parentage than the *British Queen*, and that it might be useful in contributing a variety to desserts, when all other Strawberries were out of bearing, saving the *Alpine*. The Meeting were desirous that it should be exhibited again at a later period.

RASPBERRIES.

Mr. ALEXANDER, of Lyncombe Vale Nurseries, near Bath, sent a SEEDLING, which he thus describes:—

"Upwards of an acre is grown here for market,—of *Fastolff*, *Antwerp*, *Beehive*, and other kinds,—none of which equals the seedling in productiveness; the fruit on many of the former, in consequence of excessive drought, are small, and ripening prematurely, while the latter is swelling its fruit well, and making fine canes for another year.

"It is also a great favourite with the gatherers, as its long footstalk offers facility for rapid picking, necessary for market; and the buyers (many of whom are from Wales), prefer it to other kinds, as it bears carriage better, and presents a brighter and fresher appearance a day or two after gathering.

"It has the strongest habit of any sort I know, making wood over eight feet high, which, when cut back to about five feet, produces lateral shoots, averaging seven to a cane, like those forwarded.

"I fear, in consequence of heavy rain last night, the fruit will be damp when packed, and suffer in flavour."

The laterals alluded to were over four feet long, but it was the opinion of the Meeting, that such great length was rather a disadvantage than otherwise, as the fruit in wet weather would be weighed down to the earth, unless artificially supported.

The fruit, though badly packed, was bright in colour, remarkably conical, very large, and handsome in appearance; but the flavour was deficient, being inferior to *Fastolff* and other varieties.

It was considered, however, that its reputed excellencies might render it useful for market; but a desire was expressed to see it again, gathered in better weather, and more carefully packed, before the Society pronounced decisively upon its merits.

CURRENTS.

Mr. G. PAUL, of Cheshunt, brought a collection containing the following four *red fruited* varieties, which, in addition to the well-known OLD RED DUTCH, he had selected from a large number, as the most distinct, the best in point of productiveness, and in habit the least subject to injury from storms.

THE RABY CASTLE RED.—A variety so generally well-known and esteemed as to require no comment or description.

LONG GRAPE.—Also well-known as a large and useful, long-bunched, and large-berried variety, rather pale in colour.

BROWN'S SEEDLING.—A very distinct, but little-known variety, having a long bunch; berries large and full coloured; flesh more solid than the *Old Dutch*; flavour very peculiar, having a slight smack of the *Black Currant*. It was considered likely to be valuable for culinary purposes.

VERSAILLES RED.—A new kind, very little known, but promising remarkable characteristics, the fruit being deep crimson in colour, bunches rather short, berries very large and transparent, and remarkably regular in size; the flavour was good, and, altogether, it was considered a very showy kind for dessert.

Mr. Paul brought a dish of the **WHITE TRANSPARENT**, which was found equal in flavour to the **WHITE DUTCH**, and was reported to be equally productive, and a better grower. Mr. Paul also contributed dishes of three kinds of *Black Currants*.

THE OLD BLACK.

ODGEN'S BLACK.—Having much larger berries, and, from being over ripe, appeared to be an earlier variety than the former.

THE BLACK NAPLES.—Generally esteemed the sweetest and best for eating, where this fruit is used for other than culinary purposes; it has the advantage also of hanging longer on the bushes.

GOOSEBERRIES.

Mr. Paul also brought, from a large assortment, a selection of those kinds he considered most distinct, best in habit, most productive, and finest for size or flavour.

The *Rough Red* varieties were **RIFLEMAN**, the largest of this class; **KEENS' SEEDLING**, a large and very fine-flavoured fruit, but which, from the thinness of its skin, has the unfortunate property of splitting after rain; **WARRINGTON**, the well-known, late-keeping variety; and, under the name of **OLD ROUGH RED**, the true **CHAMPAGNE**, which is probably the highest flavoured of all Gooseberries: it is well known by its erect habit of growth.

Of *Smooth Red* varieties, those selected were **STEWART**, considered the best large kind after the *Rough Reds*; and **LONDON**, one of the sweetest and best. **SLAUGHTERMAN** and **ROARING LION** were too nearly like the preceding, and inferior in flavour.

Of *Rough Green* varieties, **CONQUERING HERO** is a handsome fruit, but not remarkable for flavour.

Of *Smooth Green* sorts, **ANGLER** was esteemed the best flavoured and thinnest skinned, and is a variety which hangs well. **FREEDOM**, **COSSACK**, and **KING WILLIAM** were too nearly like it to be distinguished, and were not equal in flavour.

Some other fruits were sent to be named.

BEEES IN TASMANIA.

YOUR correspondent "T." in *THE COTTAGE GARDENER* of July 6, seems to wish for some account of my bee experience in Tasmania, whether acquired from external observation or from personal management of my own apiary. Want of time has alone prevented me entertaining your readers on the subject before; but I hasten now, under the influence of "T.'s" stimulus, to record such experiences as I have gathered during my residence of three years and a half in that island.

Bees are not natives of the southern hemisphere; yet so abundantly have they multiplied, since the time when an Englishman (of the name of Wilson, I believe), about forty years ago, brought out the first hive from England, that they

are to be found naturalised all over the various colonies of Australasia. Tasmania is no exception to the rule, for there they thrive so marvellously that the woods and forests are full of them, from which issue such a multitude of swarms every year, that any of the settlers may commence bee-keeping, or restore their failing apiaries in any season, without looking beyond the limits of their own homesteads and gardens.

It was my good fortune to find "the lines fallen unto me" in a very pleasant place, so far as the richness of the land, and the productiveness of a large thirty-years-established orchard and garden, were concerned. At the back of our residence was a plain of considerable extent, backed by a range of mountains, whose highest "bluffs," or "tiers," rose about 4000 feet from the level of the plain. These mountains, bare at their summits, were clothed at their bases, and for two or three thousand feet, with magnificent forests, more or less thinned by the hand of man; but the plain was, in some places, very free of timber.

So rich is the soil here,—they say more than twenty feet deep of alluvial deposit,—that it is inexhaustible. It is covered everywhere with the Dutch or White Clover for many miles, and being, for the most part, meadow land (or "swamp," as it is unpleasantly termed), it retains its moisture, and consequent luxuriansness, long after the drier parts of the country are burnt up. Owing to the great abundance of white Clover, not to speak of Gorse and Sweet Briar, all of which spread over the country with great rapidity, as if they delighted in the soil, there is a vast quantity of honey annually spread out by the bountiful hand of Nature, for the feast of the bees; and you may be sure our little "busy" friends are not slow to avail themselves of the treasure thus placed before them, especially as the great amount of sun, in that splendid climate, enables them to work with at least five times the success of English bees. There is also a great abundance of Apple, Peach, Plum, and other fruit blossoms, in all the cultivated districts of Tasmania, owing to the extent and productiveness of the settler's orchards and gardens.

In those districts, therefore, where the native trees also produce honey, there are usually *two* honey harvests. The first extending over the months of November, January, and February; and the latter over March and April. The honey collected during the former period is similar, as might be expected, to the finest of our English honey—very pure and delicate in colour and flavour.

But the autumn season, which begins towards the end of March (by which time all European blossoms had failed), found the bees collecting a totally different kind of honey, highly aromatic, and very dark coloured—almost as dark as tawny port wine. The flavour of this honey being not so palatable as the other, was, by myself, always left to the bees. Their first harvest I invariably plundered towards the end of February, leaving the bees to replace their store, as they best might, before winter. This second harvest, however, was never so large as the first, and in very rainy seasons (not common), in great measure, failed. Of course, in the drier parts of the island, where sand or light soils prevailed, bee-keeping was not so productive as in my own country; yet nowhere did bees fail to thrive and collect a plentiful supply of honey.—B. & W.

(To be continued.)

QUERIES AND ANSWERS.

YOUNG PINES STARTING INTO FRUIT PREMATURELY.

As in your (*A-Lover of the Garden*) case, the plants are so small as not to be large enough to be termed successions, such starting must be looked upon as a misfortune. This, no doubt, has arisen from a sudden check to the growing system of the plant, which check might be produced from various causes; for instance, if the young plants were well-rooted, and growing nicely, and you overheated, or scorched, the roots with bottom heat. This is very easily done in summer, and, therefore, if the pots are plunged, the trial sticks, or bottom-heat thermometer, should be daily, and

even oftener, examined. From 80° to 90° may be considered safe, but under 90°, rather than above it. No increased air giving, or watering, or even shading, will prevent this casualty from overheating the roots. The growing process is arrested, and, in self-defence, the plant puts forth an effort to perpetuate its kind by seed, and throws up its fruit-stalk. *Dryness* at the root, in such weather as we have had this summer, would also cause the plants to fruit prematurely. This process is resorted to when it is desirable to start older plants; but even that must be done in moderation, or the size of the fruit-stem and the fruit itself will suffer. Want of a sufficiency of air, and giving it too late in very hot weather, will also have a tendency to produce this result. A very dry temperature and a dry atmosphere will act in a similar manner. It is not unlikely that more of your young plants will start, but, to prevent them as much as possible doing so, see that the heat at the roots is not too strong; give a little air early in fine weather, or leave a little on all night, until autumn; keep a moist atmosphere about the plants, by frequent syringing and placing water in every open place, in pans, to cause evaporation; and, in bright days, shade from sun, in the hottest hours, removing it before the sun leaves the plants, and dewing them gently from the syringe, and then shut up close; though in an hour or two you may give a little air, if the evenings are warm. These modes of treatment will have a tendency to promote growth, and discourage fruiting; but if the stimulus has previously been given, and the fruit embryo started, nothing will stop its coming.

Your idea of picking out the young fruit, in order that the plant may get larger, and throw up again, and stronger, will not answer. All such plants fruit from the same head only once. Hence, to get a large fruit, you require a stout plant. Your cutting out the fruit would have no effect in causing another flower-stem to come; but whatever vigour was in your plant would be directed to throwing out one or several suckers from the stem, and one or more of these suckers might be left, and either all then removed, and made separate plants, —making thus a fresh commencement,—or one or more might be left on the old stem, and thus get all the benefit possible from it. In either case, you must have fresh growth in fresh stems, or plants, before you have another show of fruit. What, then, should you do? Well, if the shows are very small, and the stems slim, we would advise cutting them out, and using the plants as stools, to get suckers from,—if suckers or young plants are an object. If not, pitch them to the rubbish-heap at once. But if the flower-stems are as thick as a child's little finger, and the heads show that there would be two or more rows of pips, and the roots are in tolerable order, we should advise keeping them either in their pots until the fruit ripens, or, what in most cases would be better, turn them out into rough, fibry, fresh loam, that will take plenty of manure water without getting sodden; and if, after all, you do not get a specimen you like to place on the table, you will get a number of fruit that the housekeeper will be glad to get for fritters and preserving; and after all you will get suckers from these too, only a little later than from those deprived of their fruit.

MUSCADINE VINES IN POTS IN A PINE STOVE.

These (says *A Lover of the Garden*) are making long canes, but very weak, and the questions are, "Shall I stop, or cut them part back to make them stronger; or, having only one house, shall I turn them out against a south-west wall, twenty miles north of London?" The system of Vine-growing in general, and of growing in pots in particular, has lately received considerable attention. Your cutting back now can only be on the principle of better late than never. If your canes are rather stouter as they approach the top end, we would advise doing little more than stopping them there, which will cause laterals to come, which, also, must be encouraged for a time, to add size to the stem. The next season your rod, though long, might be twisted round some stakes in the pot, so as to secure the best or upper end of the rod. This is, perhaps, the best makeshift in the circumstances, and even then without seeing your plants, we could not guarantee fruit next season. Your error has been in allowing the canes to be so long and so weak. If you had nipped out the point of these

weak shoots, when four or five feet in length, another leader would have been thrown out, and that you could have stopped when it had grown two feet or so, and let it proceed again. But the first stopping would cause laterals to come freely from the joints below, and these, if encouraged to grow for a time, would, as explained in a late article, give you near the pot as much girth of stem as the circumstances and other matters of culture would guarantee;—just on the same principle, that an Oak tree with a large head standing alone in a park, has a much larger trunk near the ground, than an Oak of the same age that has been drawn with many others in a thick wood, with no room for side branches. We should imagine, from your description, that your canes have never been stopped, and are all along rather innocent of laterals. If, however, the top part of your cane is smaller, and scarcely any greener than the lower part, then you might take away a part of it, and thus encourage laterals nearer the pot; but the stopping and the encouraging of laterals should have been done earlier.

As to turning the plants against a wall, that would be all very well towards autumn, for the thorough ripening of the wood; but in your case you seem to be more concerned about growth, than maturation; and to encourage growth, we consider the Pine stove superior to the open wall. If you have any difficulty, however, in attending to the Vines properly in the pine stove,—such as syringing, watering, &c.,—then, as the Vines are a hardy kind, and the end of July and August are generally warm months, we have no doubt the Vines would do very well against such a wall. The shoots should be fastened close to it, and the pots prevented being over-heated, by a little litter placed in front of them, which will be better than plunging them all round, chiefly because they will derive more advantage from the heat of the day, and will want water oftener, which should be of a rich manurial character, and frequently changed,—such as cowdung at one time, soot at another, guano, &c., if to be got. The great thing is, first to get strength of shoot, and then, as lately explained, secure its thorough maturation.

VINES AND PINES TOGETHER.

Before we could satisfactorily answer your (*A Lover of the Garden's*) questions, we should require to know something of the construction of your house. As a general rule, Vines in such houses will do best up the rafters, and should not be so thick as too greatly to shade the Pines. The two plants do best together in houses that are rather lofty, and have some amount of upright glass in front. The Pines derive the benefit of this upright glass, and there is a greater amount of air between them and the Vines; and if the back wall, at least at its highest part, is kept moderately white, there is a good amount of light reflected on the Pines below. If the houses are very low, and no front lights, it is more difficult to manage Vines properly on the rafters, though very fine Grapes, and Pines too, are thus produced. In such houses, with the front wall little above the ground level (say eighteen inches), and the back wall eight or nine feet, Vines would do very well on the back wall, above the height of the Pines, if there was nothing on the rafters to intercept the light from them. In a Pine house, as generally constructed, unless the Vines were some five or six feet apart up the glass, it would be little use having Vines on the back wall also, as they would not get the requisite amount of sunlight. There would also be another objection, the difficulty of resting such Vines, though, in most cases, there might be means of taking out Vines planted at the back as well as those planted at the front. This taking out of the Vine, may be considered an essential to high success in either case.

We once attended to Vines in lofty Pine stoves, that did remarkably well, and were never taken out. The Vines were planted at the front of the house. When pruned, they were laid along there, quite close to the glass, and as far from the front flue as possible. The houses were heated by two flues, one at the front, and one at the back, having each a furnace to itself. After the Vine-wood was ripe, and when pruned, the front flue was not worked, until it was desirable to start the Vines. The back flue kept the house at an average of 50°. If a Pine started, it was moved to a warmer place. The front sashes could have easily been made to move, so as to place the Vines

outside of them, and yet protected from rain, &c. We have seen double sashes for this purpose, the outer ones opened, to give air to the Vines when necessary, when the inner ones were shut to keep the Pines all right. In such a position, the Vines could be kept comfortable, and heat admitted to them from the inside, until they had fairly broken, when the stove heat would suit them. Something of the means of resting Vines grown in Pine stoves, must be resorted to, if great and general success be expected. Pines will stand a comparative low temperature, if rather dry in winter, but if long at, or below 45°, the fruit that shows will be apt to be weak and deformed. These conditions secured, fine Grapes will be obtained in Pine stoves. If the Grapes are grown on Vines in pots, of course there will be no trouble in getting them out and resting them.

ENCLOSING PART OF A VINE WITH GLASS.

In answer to our correspondent (*Vine*), there would be more force, as to your idea of want of reciprocal action between the roots and branches, if you had been going to force early the enclosed part, and more especially if the stem of the Vine was not placed inside the house: but the house you intend to place over the Vine, now on the wall, being merely a greenhouse, in which the Vine will not break more than a fortnight or so, before that on the wall, there will be no difficulty from the quarter alluded to. It will, however, be decidedly advantageous to have the stem of the Vine in the enclosed part. If the Vine is such as you approve, and in good health and vigour, we would advise so enclosing it, in preference to cutting part away and planting a fresh one. It is no uncommon thing to see a tree having a succession of fruit, by its branches being in two places, and these of a different temperature. Your question shows us that there is thought and consideration in you practice, and, in such cases, the practice is more apt to be right.

BREEDING GLOWWORMS.

"I am endeavouring to breed some *glowworms*, in a large vivarium arranged with damp, moss-covered branches, and stones, and earth, and my doubt is, as to what the glowworm feeds upon? I have ransacked several works on insects to no purpose, or I would not trouble you."—C. M. M.

[The larva of the glowworm, as well as the perfect insect, feeds on snails of different kinds, and, we believe, on small worms. Its history is to be found in any good modern work on entomology. It is sometimes two years in coming to the perfect state. We shall be obliged by any information on this subject.]

THE POTATO CROP.

In consequence of the long continuance of dry weather, I fear on light, sandy soil the tubers will be small; but, on the whole, I never saw crops look more healthy and promising. I have about two acres and a quarter under my care, and on looking over them on the 17th, I could not discover the least symptoms of disease. My early potatoes, grown in the garden, are this season large and productive, some roots of the *Bond's Kidney* having upwards of forty good-sized tubers. The *Early Sydenham* is very fine this season, and I think A 1 in early round Potatoes; although at the Malvern Exhibition, the leading Exhibition of this county, the Judge only allowed the *Sydenham* to play second fiddle to *Bond's Kidney*. But, in favour of the *Sydenham*, I must affirm, I have never seen the least symptoms of a bad one.

There is some talk of the disease in this neighbourhood, but I have seen only four bad tubers during the whole season. Two of these were brought from a distance to show me, and seemed to be taken as much care of by the man that found them as though they were nuggets of gold; for, when he had shown and explained the circumstance to me, he carefully placed them back again in his pocket.

I shall take the earliest opportunity of communicating a few remarks respecting the culture, &c., of the Potato, as practised very successfully by me for the last ten years.—EDWARD BENNETT, *Perdiswell*.

TO CORRESPONDENTS.

WOODLICE (*C. B.*).—These, which you call "cheeselogs," are great pests in gardens, and every year we have numerous inquiries as to how to destroy them. Boiling water poured into their haunts, and baits set to entrap them, are the only remedies. Pray refer to page 169 of our 481st number. You will there find all we can advise upon the subject. Burning sulphur in your frame was a most destructive error. The fumes of burning sulphur (sulphurous acid) are most fatal to all plants. We cannot say whether your Melon plants are likely to recover, so much depends upon the extent of the injury they have sustained.

SEEDLING GLOXINIAS (*W. O. D.*).—They are very good, but not distinct from, or superior to, others already in cultivation.

STRAWBERRY GROWING.—"Minna" intends following the advice of "H. C. K. S.,—Rectory, Hereford," in re Strawberry culture, "to stand by" and see the plan thoroughly carried out; but she wishes to know what is to be done with the crown of the plant, and if it is to lie at the bottom of a little pit six or seven inches deep, where she imagines it would suffer from want of air and light.

NAME OF ROSE (*Varro*).—No one can tell the name of a Rose from seeing a dry blossom of it, and a dry leaf or two. There are at least 300 kinds of Roses in cultivation, without any names at all; their names having been forgotten. Therefore, there are only two or three men in the kingdom who could be sure of the name of a fresh-blown Rose, without seeing it on the plant, and the plant in an ordinary state of health; and, therefore, again, it is just like fortune-telling, to encourage a belief that anyone could tell the name of Roses sent by post.

NAME OF CHERRY (*A. R.*).—Your Cherry is not the Black Tartarian, but an old variety called *Tradescant's Heart*.

NAMES OF INSECTS (*Chip from the Midland Counties*).—The insects which attack the Pear and Morello Cherry leaves, are the larvæ or grubs of a small black-winged Saw-fly (*Selandria Ethiops*). Dust the leaves well with powdered lime. The other small insects sent in the box are a species of Weevil, belonging to the genus *Apion*; the Celery leaf is marked with a number of minute blotches, about the size of pins heads, which may have been made by the rostrum of the Weevils; but we cannot believe that they strip the Celery leaves, leaving only the stalk. Something else must be at work. Pray send us a leaf in process of destruction, or a stalk with the leaves eaten, and we shall be better able to judge.—W.

NAMES OF PLANTS (*Clericus*).—Your plants are as follows:—1. *Gazania rigens*, the Great-flowered Gazania. 2. *Calystegia pubescens*, the Downy Double Bindweed. 3. *Lysimachia nummularia*, the Moneywort, or Trailing Loose Strife. 4. *Cineraria maritima*, the Sea Ragwort. This is quite hardy, although nowadays made use of as a bedding and pot plant. 5. Is certainly *Ceanothus azureus*. We have seen this plant planted against walls in various localities. In some we have observed it with beautiful azure blue flowers, whilst in other places we have seen it with very pale blue flowers. Soil and situation cause the difference. We should say, that if flowered in a small pot close to the glass, and, perhaps, half starved, its flowers would naturally become poor and pallid, whilst the same plant planted out in a favourable warm border in a fertile soil, would have its flowers large and highly coloured. (*T. S. W.*).—Your plant is the *Potamogeton densus*, or Opposite-leaved Pondweed. The *Anacharis alsinistrum* has little, oval, oblong, blunt, serrulate leaves, and always three in a whorl. (*F. S.*).—Your climber from East Indian seed is *Clitoria ternata*. (*An Old Subscriber*).—Your Ferns which came with the Orchids named at page 245, are—1. *Doodia caudata*, a very pretty little greenhouse species, from New South Wales and Van Diemen's Land. 2. *Pteris Chinensis*, or *Pteris crenata*, of Moore. A stove species, although it does well with us in the greenhouse.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.

AUGUST 17th. ORMSKIRK. Secs., Wm. Shawe, and James Spencer, Ormskirk.

AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth, Shipley.

AUGUST 28th. HALIFAX AND CALDER VALE. Sec., Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.

OCTOBER 7th and 8th. WORCESTERSHIRE. Sec., Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

N.B.—Secretaries will oblige us by sending early copies of their lists.

TESTIMONIAL TO MR. HEWITT.

THE Managing Committee of the annual Poultry Exhibition held at Preston, Lancashire, have just presented to Mr. Edward Hewitt, Spark Brook, Birmingham, a lasting and somewhat costly memorial, expressive of their high estimate of

the integrity and ability with which he has discharged his duties as arbitrator at the public meetings of this Society. The design is artistic, and the workmanship leaves nothing to be desired. Beneath a massive oak, whose gnarled branches would betoken the lapse of centuries, stands a stag, apparently listening to the distant approach of some unwelcome intruder. The bark of the tree is of frosted silver, happily relieved by highly burnished foliage; and among the upper branches, is affixed a glass bowl, curiously manufactured, to represent common ice. This being surmounted by a net-work of silver wire, forms, altogether, a complete and elegant flower-stand.

It is wholly of sterling silver, and was manufactured under the directions of Mr. William Tait, of Syke Hill, Preston.

ROYAL AGRICULTURAL SOCIETY'S POULTRY SHOW.

CHESTER, JULY 22nd.

LET us suppose a merchant, the head of a good old firm, feeling that younger men were pushing him hard, and aware that a little fresh blood, and some of the vigour and elasticity of youth were wanting to keep him in his position. Let us suppose that such an one found in his establishment a young man possessing all the necessary qualities, but not exactly so important in the way of family and wealth as himself. Let us imagine that he enters into a partnership with him for seven years; that the good effect of it is immediately seen in the increase of his business, and in the extent of his connections; that the young partner is able to bend to humble, but safe and useful customers, and to make to them concessions which the old gentleman would not submit to; that the business circle of the firm is enlarged, and that the smaller clients introduced form a reserve and an element of strength, which will be available when the old customers of the firm have dropped off in the natural course of events. In the face of these results, fancy the old gentleman forbidding the younger partner to be plagued with these small customers, giving him notice of dissolution of the partnership, and summoning those, who were witnesses to the deed of association, to attend to see it annulled.

Would not a friend take the old gentleman by the hand, and reason with him,—

“More in sorrow than in anger,”—

“My dear Sir, you are old, and not quite up to the present times. People are dissatisfied with your stiff mode of doing business; you will find your profits falling off. Your connection is an old one; and as old clients die, you will have none to take their places. You have strong opponents, many of them formed by yourself originally. You depend on the yearly profits of your trade; do not throw them away; keep the young partner.” Imagine the old gentleman positively refusing any concessions of the sort; would not his friends grieve when they witnessed the dissolution of partnership? So did we when we attended the last Poultry Show of the Royal Agricultural Society of England.

As we journeyed on to Chester, we passed in review, in our mind's eye, the different Shows we had seen, from Lewes to Salisbury. The crowd always about the poultry. What a sight did the space between the horses and the birds present last year! What crowds, especially of the fair sex! and how many hundreds of what we may call the lower classes rejoicing that they had something that identified them with the Royal Agricultural Society! They could look at and admire the cattle; but they understood poultry, and many looked forward to becoming exhibitors. Many looked forward to forms of entries, but, alas! they looked

“For a form that shall never return.”

And we now proceed to give an account of the positively last poultry performance in connection with the Society—

“’Tis true ’tis pity, pity ’tis ’tis true.”

But the Royal Agricultural Society always seemed to treat poultry as a proud, poor man treats the illiterate, it may be vulgar woman, whom he has married for her fortune. He likes the money, but he is ashamed of the wife who brought it. This is inexplicable to us. Not to put poultry in the first place is second only in turpitude to sacrilege or

high treason. Tastes differ. We once met a man at a revel, who said, if he were rich, he would pay a regular professor of single-stick to have a match with him every morning before breakfast: that was to please himself. We have met with hundreds who have tried to please everybody, and we just ask ourselves whether we are trying to do it in this report. No; we are not. We do not want to please the Royal Agricultural Society of England. We would not dip our pen in gall,—“we wouldn’t; no, we wouldn’t; no, not for twenty pounds, we wouldn’t:” but if we knew the raw spot on the Royal Agricultural Society of England, may we never be charming if we would not dip it in vinegar. Give up poultry indeed! It made us shudder to hear a fine specimen of a pig-breeder and exhibitor, who was trying the “Sol-fa” of a family by smart ash-stick visitations, first on what will be the hams, next on the future fore-loins of a porcine tribe, and who thereby elicited all the sounds that exist between a squeak and a grunt, and, by uncommon activity, managed to make all the pen “give tongue” at once, declare the “cocks make such a crowing, he could not hear himself speak.” He will have his peace and quietness next year. There was once a woman—perhaps, we should say a lady: she was the wife of a large hop-grower. She hated a good hop year. It interfered with the house; the master was never at home; if he were, somebody or other, with dirty shoes, was always wanting him; the place was not fit to be seen; and, for her part, she wished there were no hops. One year she was in her glory,—there were none; her house was clean; nothing disturbed her. Next year the same, and another, and then there were misgivings, and little luxuries had to be given up; and then the hops ceased altogether, and the good lady had peace, quietness, and ruin. This is too often the result of a search after peace and quietness, and of abandonment of ordinary things. The most showy are not always the most profitable. Now for poultry.

There was a capital display of *Dorkings*, and we may here make a remark, which will hold good throughout, that we have never seen the birds in such good condition as this year. With the exception of the Turkeys, they were most of them in hard plumage. The chickens were more numerous than the adults. Both classes afforded triumphs to Captain Hornby, who took the first and second prizes in each. We were very pleased to see one of the veteran exhibitors in this class, the Rev. John Hill, who was also successful. The nineteen pens of *Spanish* formed, in the opinion of the Judges, one of the best classes ever seen; not that the fortunate pens were so much in advance of all predecessors, but from the numbers of good birds that were there, and from the difficulty there was in deciding on the merits and consequent classification of the successful.

A reference to the prize list will show that most of the awards went to new names.

The next is a class that is daily growing in public estimation—we speak of the *Game*, which produced twenty-four competing pens. The names of the successful will be a guarantee for the quality of the birds shown:—Messrs. Hornby, Hindson, Wright, and Worrall.

The *Cochins* brought out our old friend, Mr. Punchard, in the character of first-prize taker. This is a bad season of the year for adult *Cochins*; as, though they may not be in deep moult, yet their plumage is shabby, and their feathers seem more perishable, and of a softer nature than other fowls.

There was an excellent class of *Brahma Pootras*, all good, handsome birds, and able to vindicate their claims to respect and attention at the hands of those who send out prize lists. Whether for size, beauty, or condition, these birds deserved distinction, and Mr. Botham may boast of his victory.

It is almost needless to say, Mr. Archer took two out of three prizes for *Silver-pencilled Hamburgs*. We fancy one of the causes of this gentleman's success is, that he carefully selects pencilled birds, while many have fallen into the error of choosing them with spots, which, instead of forming pencilling, stand by themselves on the white ground, and make a speckled fowl.

We must speak very highly of two hens in Mr. Lilly's pen of *Gold-pencilled*: even Mr. Worrall had to be content with the second prize. The *Silver-spangled* were good birds, and clear tails are becoming common. We have, however, seen

nothing so good as Mrs. Pettat's birds of last year; and we fear with clear tails we are getting *clear* bodies.

Mr. Worrall took the first for *Golden-spangled*, with an excellent pen; these birds are better than their silver brethren.

The *Polands* were the weakest class in the Exhibition, and afforded an easy triumph to Mr. Dixon. If the amateurs of these birds do not make an effort, the promoters of Shows will be obliged to curtail the prizes offered, seeing the entries are so few in number.

In spite of moulting, the unfavourable season of the year, and every other disadvantage, Mr. Fowler showed six *Geese*, that weighed 115 lbs. We need hardly add, they took first and second prizes.

He was equally successful with *Aylesbury Ducks*, but they were not up to his usual weight. We have seldom found these birds so deficient as at this Show.

There was a good show of *Rouen Ducks*, all young birds; Mr. Fellowes ran Mr. Fowler hard, but the latter took first honours.

We are able to speak most highly of the *Buenos Ayrean*. These beautiful birds are at last being reduced to their original size, which was little larger than a Widgeon. Miss Steele Perkins' were perfect; Messrs. Dixon and Churchill's were very good.

The *Turkeys* were excellent birds.

And this is our last poultry report of the last Royal Agricultural Society's Exhibition. We are sorry for it; we have spent happy hours and many of them with them. We are bound to thank them, and we do. We cannot help hoping and believing, that the time is not far distant when our connection will be renewed. The days of exclusiveness and buckram are past, and any Society that appeals to the purse of the public, must be prepared to bow to its decisions, and to submit to its legitimate and reasonable demands.

It would seem as if amateurs were determined the last Show should be worthy of them, and we unhesitatingly say, we never saw so many, really first-rate birds, in the same number of pens. Many were perfect, and the faulty were not more than six. The poultry was the point of attraction, and was crowded from the time the yard was open, till the close. Many wished to take "a last fond look," but could not, on account of the numbers that thronged about it.

PRIZES AWARDED FOR FARM POULTRY.

DORKINGS (Chickens of 1858).—First and Second, Capt. W. Hornby, R.N., Knowsley Cottage, Preseot, Lancashire. Third, Rev. T. L. Fellowes, Beighton Rectory, Aele, Norfolk. Fourth, J. Robinson, Vale House, Garstang.

DORKINGS (more than one year old).—First and Second, Capt. W. Hornby, R.N., Knowsley Cottage, Preseot, Lancashire. Third, Rev. J. Hill, the Citadel, Hawkestone, Shrewsbury. Fourth, J. D. Hewson, M.D., Coton Hill, Stafford.

SPANISH.—First, W. M. Lilly, Monyhill Hall, Kingsnorton, Worcester. Second, Mrs. J. C. Hall, Surrey House, Sheffield, York. Third, W. W. Brundrit, Churchfield House, Runcorn, Cheshire. Fourth, J. Dixon, North Park, near Bradford, York.

GAME.—First, Capt. W. Hornby, R.N., Knowsley Cottage, Preseot, Lancashire. Second, J. Hindson, Barton House, Everton, Liverpool. Third, W. Wright, West Bank, Widnes, near Warrington. Fourth, H. Worrall, Spring Grove, West Derby, Liverpool.

COCHIN-CHINA.—First, C. Punchard, Blunts Hall, Haverhill, Suffolk. Second, E. Musgrove, Aughton, near Ormskirk, Lancaster. Third, W. M. Lilly, Monyhill Hall, near Kingsnorton, Worcester.

BRAHMA POOTRA.—First, G. Botham, Wexham Court, Slough, Bucks. Second, R. Teebay, Fulwood, Preston, Lancashire. Third, J. K. Fowler, Prebendal Farm, Aylesbury, Bucks.

HAMBURGH (Silver-pencilled).—First and Second, E. Archer, Malvern, Worcester. Third, Rev. F. B. Pryor, Bennington Rectory, Stevenage.

HAMBURGH (Golden-pencilled).—First, W. M. Lilly, Monyhill Hall, Kingsnorton, Worcester. Second, W. C. Worrall, Rice House, Liverpool. Third, J. Dixon, North Park, near Bradford.

HAMBURGH (Silver-spangled).—First, R. Teebay, Fulwood, Preston, Lancashire. Second, W. M. Lilly, Monyhill Hall, Kingsnorton, Worcester. Third, G. Botham, Wexham Court, Slough, Bucks.

HAMBURGH (Golden-spangled).—First, W. C. Worrall, Rice House, Liverpool. Second, W. R. Lane, Bristol Road, Birmingham. Third, J. Dixon, North Park, near Bradford.

POLANDS.—First, Second, and Third, J. Dixon, North Park, near Bradford. Fourth, H. Churchill, Gloucester.

GEESE.—First and Second, J. K. Fowler, Prebendal Farm, Aylesbury. Third, Harriett Hill, Stretton Grandison, Ledbury, Herefordshire.

AYLESBURY DUCKS.—First and Second, J. K. Fowler, Prebendal

Farm, Aylesbury, Bucks. Third, H. Smith, Sutton Maddock, Shiffnall, Shropshire.

ROUEN DUCKS.—First and Third, J. K. Fowler, Prebendal Farm, Aylesbury, Bucks. Second, Rev. T. L. Fellowes, Beighton Rectory, Aele, Norfolk.

EAST INDIAN DUCKS.—First, Elizabeth S. Perkins, The Cottage, Sutton, Coldfield. Second, J. Dixon, North Park, near Bradford, Yorkshire. Third, H. Churchill, Gloucester.

TURKEYS.—First, Rev. T. L. Fellowes, Beighton Rectory, Aele, Norfolk. Second, J. K. Fowler, Prebendal Farm, Aylesbury. Third, Mrs. Hill, Stretton Grandison, Ledbury, Hereford.

MERITS OF ANDALUSIANS.

I SEE in your last number a few words on the subject of Andalusians. No one, I suppose, will be inclined to doubt the utility of this very beautiful breed of poultry. They are as abundant layers as the Spanish, lay larger eggs, continue laying through the winter, are larger in size, more hardy, and are more easily fattened for the table. I see that a Mr. Coles obtained a prize the other day for some specimens, as being amongst the best for table purposes. Mr. Bailey, in 1854, wrote thus:—"Although they have been exhibited for years, they have not yet been deemed of sufficient importance to deserve a prize in a distinct class. It is, however, but fair to state, that good specimens are seldom shown without being distinguished by the Judges." This hint has not been taken, and we all know that the various class will never encourage any breed. Now, Sir, what is the purpose of Poultry Shows? Is it not to bring into notice the most useful sorts of fowls? Is it not, then, time that a distinct class should be assigned to these birds? The entries the first year might not be numerous, but in a short time, I believe, the competition would be as great as in the Dorking and Spanish classes. I have kept *Polands*, *Dorkings*, *Game*, and *Hamburgs*, but none of these have I found so profitable as the *Andalusians*, which I have had for about eight months. Mine are not particularly good birds. I am looking forward to the Shows, to purchase finer specimens. I have reason to lament, therefore, that there is no separate class to choose from.—A LOVER OF THE USEFUL.

REARING CHICKENS BY HAND.

AFTER the chickens are hatched, place them in a covered basket with flannel, and leave them for about twelve hours; then remove them to a hen-coop, turned up so as to prevent their escape, and sprinkle a little hard-boiled egg, chopped fine. They may be taught to eat by tapping with the finger-nails upon the board, to imitate the noise of the hen's beak. A very good artificial mother, without any expense whatever, may be made by getting an old flat saucepan with a lid, or a foot-tin, such as is used to warm the feet of the chilly in bed. Cover this with thick flannel or blanket, changing the cover often enough to prevent vermin. Fill the vessel with boiling water, and stand it upon two bricks, in a corner of some room of a moderate temperature, raising its height from the ground according to the growth of the brood. The water will require to be changed about four times every twenty-four hours. You may regulate the heat of the water you put in, by the temperature of the weather. By moderate attention and careful feeding, you need not lose ten out of a hundred.—J. S. DUNCAN, *Fareham, Hants.*

PIGEONS.

(Continued from page 250.)

THE DISEASES OF PIGEONS.

THE old proverb, that prevention is better than cure, is, I think, very appropriate to the ailments of Pigeons. I have been all my life a keeper of Pigeons: at times I have had a great many. I have indulged in my hobby in England, Prussia, and France; yet I know little or nothing of diseases. I conclude that, my ever attending to them myself, keeping them well fed, clean, and provided with every necessary, and always flying them, whatever sort they might be, is the great

cause of my exemption from the numerous maladies which some old writers, following Mr. Moore, the father, if I may so call him, of English Pigeon-fanciers, have enumerated.

When I have purchased a sick Pigeon, cleanliness and good living, liberty, the salt-cat, and the bath, have soon restored it to health. If the bird is mopish, and droops its wings, a few pills of butter or suet are very beneficial. Cut or broken feathers I pull out at once. The longest wing or tail feathers are perfectly reformed in three or four weeks, and at once give the bird renewed powers of locomotion and additional clothing.

The only disease that has troubled me, to any extent, has been canker: a cheesy-looking lump, or lumps, of pus, of very disgusting odour, which forms in or about the mouth, and which I consider highly contagious. I have sometimes bought the bird with it; at other times it has appeared without any apparent cause. I believe it arises, in the first case, from a bad state of the blood, and breaks out in any part wounded by fighting, or otherwise. It is also said to arise from their drinking from a tin vessel, or from dirty water. It is very fatal to young birds. When old birds are attacked, I remove the matter with a thin piece of wood, cut like a little spatula, and rub the place thoroughly with caustic. This must be done effectually at once, or it will only form again, spread more, and become more difficult to eradicate. I believe confinement and want of condiments to be a common cause of this disease.

I have seen cases of many other disorders, but have no practical knowledge of them.

PARASITES.

The small vermin that infest the pigeon-house and Pigeons are of five kinds, viz., fleas, lice, feather lice, mites, and ticks.

Fleas are engendered by dirty, ill-kept lofts, and may easily be got rid of by cleanliness, brushing out the nests and corners, and not allowing dirt, dust, and feathers, to lay about or accumulate. They are much like other fleas, but smaller, blacker, and, though teasing, will not remain with human beings.

Lice infest the bodies of the birds, breeding among the feathers, mostly about the head and neck, but also running all over the body. These usually attack sick or delicate individuals; and they may almost be considered as constitutional with some. They are very annoying to the poor birds, keeping them in low condition, and retarding their recovery. Butter, or lard, rubbed on the skin, is said to kill them; but I consider a little powdered sulphur, dusted in among the feathers, the best remedy. Cleanliness and good condition are the best preventives.

Feather lice differ considerably from these; they are elongated and flattened in form, very tough, and difficult to remove from the feathers between the fibres of the vanes on which they live. They do not appear to inconvenience the birds at all. Their food, I think, is the down at the quill end of the feathers; and it seems almost as if they were intended to reduce the warmth of the bird's covering in summer; for their number must be very much decreased at moulting-time by the quantity cast off with the old feathers, and not until spring can they increase sufficiently to thin the warm under-covering of down, which in summer is not so necessary for the Pigeons as in the cold months of winter.

Mites are the smallest, and by far the most troublesome, pests incident to Pigeons. The largest are not larger than grains of poppy-seed, generally black, with a white streak or spot. They inhabit the chinks in the walls, the cracks in the wood, and often congregate in thousands in the nests, whence they sally forth at night and attack the Pigeons: after their feast they appear of a red colour. Lime-wash seems to have no effect on them. Mercurial ointment they appear to care little about. They get into the ears of the young birds, and torment them so much in warm weather, that they retard their growth, and often prove fatal,—even sometimes driving the old ones to forsake their eggs or young.

I am not sure that I can offer a perfect cure for their attacks, but a drop of oil on the ears, under the wings, and where else the mites may be seen, will prevent their annoying the young ones. Powdered sulphur strewn in the nests, and dusted among the feathers of the old birds, is the best plan I know of. As a preventive means, I would advise cleanliness; stop

all cracks and chinks, let the woodwork be planed and painted, and do not give the Pigeons hay for nests; heath and birch twigs are the best. Washing the walls, painting the woodwork, so as to stop all cracks, however minute, and, perhaps, the addition of powdered sulphur in the limewash, may be a good precaution. I am inclined to the opinion, that their attacking the ears and mouths of young Pigeons, sometimes induce canker in those parts.

Ticks are the last and most disgusting parasites that attack Pigeons. They are also the largest and most rare. I believe they proceed from an ugly, curious, flat-looking fly, about the size of a common house-fly, of a slaty-grey colour, and very flat in form. In warm weather one may occasionally be seen skipping over the Pigeons, and quickly hiding among their feathers. The ticks generally fasten on the head of the bird, and grow as large as tares, when the feathers not being large enough to hide them completely, they may be picked off. I have not often found them on Pigeons in this country, but more frequently on young sparrows. I am inclined to think they do not strictly belong to Pigeons, but occur on them more as exceptions.—B. P. BRENT.

(To be continued.)

OUR LETTER BOX.

FEVERED HEN.—“If the disease in poultry which is called roup in England, is the same as that which is similarly named in Scotland, the following account of a case and cure may not be without its uses:—I have a Silver-pencilled Hamburgh hen, very much prized on more accounts than one. She is, I believe, almost a perfect bird; her laying properties are most excellent, but what, perhaps, endears her most of all, is the circumstance of the hen being a native of the good old city of Lincoln—a city endeared to me by many very pleasing associations. This hen was seized about a month ago with a kind of cough or bark, and rattling in the throat: the people hereabouts pronounced it to be a case of roup. My ‘GARDENERS’ were, unfortunately, at the binders, so that I could not consult that useful eyelopædia. The case was urgent, and as I do not get my copy of THE COTTAGE GARDENER until the Friday night after publication, if I had asked advice through its columns, I was afraid the information would come too late. Mr. T., one of my advisers, removed from its tongue a thick, horny substance, similar to the one herewith enclosed. It gave some little relief, but a week after she was as bad as ever. At length my ‘GARDENERS’ came home, and after reading all that is written therein, from Dr. Horner downwards, I resolved to try copalba as he suggests. I was dissuaded, however, and persuaded to examine its tongue again, when another scale was removed, which made matters better for a few days, after which she was as ill as before. A third time this substance was removed, which is now enclosed, and the top of the protuberance above the tail cut off with a pair of seissars, which induced bleeding. Next morning two eggs were found below her perch, one the size of a marble, completely shelled, the other the proper size, but without shell, and now she is in full health and vigour, and laying as usual. This has been accomplished without the aid of any physic, simply the persevering removal, by operation, of the horny substance which enveloped the low side of the tongue, and a little blood-letting. If this is the roup of England, I am surprised that this mode of procedure is not known in England; at least, the writers in the ‘GARDENER’ seem not to be aware of it, for there was not a person here to whom I mentioned the case, who was not perfectly well aware of what was necessary to be done.”—D. G. M’LELLAN.

[Your hen was not affected with roup, but with fever, and inflammatory symptoms arising from over-excited egg organs. Bleeding as you did relieved her. The scale on the tongue is identical with the “fur” on the human tongue during severe fevers. Lower diet, and abundance of green food, will probably keep your hen in health.—ED.]

GAME CLASSES (Not a Disappointed Exhibitor).—The simple question is, where the birds the best that obtained the prizes? We cannot insert anonymous innuendos giving pain and raising suspicions, without any proof.

LONDON MARKETS.—JULY 26TH.


POULTRY.

London is getting thin. Everyone is flocking out of it. The Ministers have had their white bait dinner, and the demand for choice poultry becomes daily less. The supply will, however, diminish, owing to harvest operations in the country. The tendency of the market is downwards, as will be seen.

Each.		Each.	
Large Fowls ...	4s. 6d. to 5s. 6d.	Leverets.....	3s. 0d. to 4s. 0d.
Small ditto.....	3 6 „ 4 0	Pigeons	0 8 „ 0 9
Chickens.....	2 0 „ 3 0	Guinea Fowls .	0 0 „ 0 0
Geese	5 6 „ 6 6	Rabbits	1 4 „ 1 5
Ducks	2 6 „ 3 0	Wild ditto	0 9 „ 0 10

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WEEKLY CALENDAR.

Day of Mth	Day of Week.	AUGUST 3—9, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
3	Tu	<i>Adesmia viscosa.</i>	30.016—29.902	90—51	S.	—	28 af 4	44 af 7	33 af 10	24	5 54	215
4	W	<i>Aloe depressa.</i>	29.904—29.880	88—52	S.W.	—	29 4	42 7	12 11	25	5 49	216
5	Th	<i>Aloe flavispina.</i>	29.871—29.761	77—54	S.W.	.88	31 4	41 7	morn.	26	5 44	217
6	F	PRINCE ALFRED BORN, 1844.	29.698—29.610	78—51	S.W.	.30	33 4	39 7	0 12	27	5 38	218
7	S	<i>Aloe nobilis.</i>	29.698—29.640	68—54	S.W.	—	34 4	37 7	29 1	28	5 31	219
8	SUN	10 SUNDAY AFTER TRINITY.	29.714—29.648	67—52	S.W.	—	36 4	35 7	0 3	29	5 54	220
9	M	<i>Aloysia citriodoria.</i>	29.948—29.749	70—43	W.	.14	37 4	33 7	sets		5 16	221

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 74°.3 and 51.2°, respectively. The greatest heat, 92°, occurred on the 3rd, in 1856; and the lowest cold, 36°, on the 6th, in 1833. During the period 125 days were fine, and on 92 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should now be taken of showery weather, for transplanting an abundance of vegetables for supply throughout the winter. The decline of some of the earlier quarters of *Peas*, *Beans*, *Cauliflowers*, and *Spinach*, will afford ground for making further additions to the stock of *Broccoli* and *Winter Greens*, such as *Brussels Sprouts*, *Curled Kale*, *Savoy*, &c. Have the ground between all crops frequently hoed, both to keep down weeds and to retain moisture, by filling up the cracks.

CABBAGE.—Plant out abundantly, of the June and July sowings, for young *Cabbage* and *Coleworts*, in the autumn and winter.

CARDOONS.—If advanced to full growth, tie up the leaves close, and earth-up all round each plant, to blanch.

CAULIFLOWERS.—Hoe, and draw earth to the stems of such as were planted out last month, for autumn and winter crops.

CELERY.—Continue planting more into trenches, for a plentiful successional winter crop.

LEEK.—Earth-up three or four inches high, to blanch, or whiten, the lower portion.

NASTURTIUM BERRIES.—Gather, for pickling.

PEAS.—Earth, and stick the late crops.

RADISHES.—Sow, for succession, in light, moist soil.

SCARLET RUNNERS.—Stick, and top the late crops.

SPINACH.—Sow. The *Flanders* is the best sort for winter use. The seed is nearly round, and smooth, like the common round, which is sometimes sent by seedsmen for the *Flanders*, and, consequently, is a sad disappointment to the grower.

TURNIPS.—Sow a small quantity.

FRUIT GARDEN.

WALL TREES.—Finish the principal summer training and pruning, by cutting out the foreright and other ill-placed, improper, and superfluous shoots of the year, and training in the others close to the wall, at full length, where there is room to extend them. Hang bottles of beer, mixed with sugar, in various places, against the walls, where the flies, wasps, &c., are likely to attack fruit, to trap and destroy them.

FLOWER GARDEN.

This is a favourable time for noticing the effect of the present arrangement of the colours in the beds, either to vary or correct it another season. A plan of the garden will be useful, writing the names of the plants on the beds, when you have decided what each bed should be planted with next season. Besides, it will save from mistakes, being an excellent clue to guide in the propagation of the number of plants required, that these may be neither too many of one plant and too few of another, but with some approach to the exact number, by having a well-defined object in view.

BULBOUS ROOTS, of various sorts, lately out of bloom, and the stalks decayed, to be taken up. If an increase of offsets is required, to be replanted.

COLCHICUMS.—Plant, to flower in the autumn.

CHRYSANTHEMUMS.—Top the plants in the open ground. Shoots layered now will make good plants; or the top shoots put in as cuttings, two or three in a pot, will make neat dwarf plants for blooming in the autumn.

DAHLIAS and HOLLYHOCKS.—To be regularly gone over, and tied up. The high wind of Sunday, the 25th ult., tested the strength of stakes and ties; and where there was any neglect to provide against its wild career, the prostrate forms of many a favourite will annoy with vain regrets.

GERANIUMS (Scarlet and other sorts).—Cuttings of them put in will strike freely in the open ground.

INTERMEDIATE STOCK.—Sow on a shady border. The seed to be very slightly covered. When potted, the plants are very easily protected, as they will bear, without injury, several degrees of frost during the winter, and are universally admired for their bright colour and fragrance when planted out in the spring.

LILIES.—The *White*, *Orange*, and *Martagon* kinds, that have now done flowering, and the stalks decaying, may be taken up, and the offsets removed from the old roots; the small offsets to be planted in a week or two, and the larger ones in September or October.

PINKS.—Plant out pipings, and put in a second crop of cuttings.

POLYANTHUSES.—Part and plant, after rain.

TULIPS.—Look over, and divest them of their loose skins.

WILLIAM KEANE.

THE BEST TIME TO STRIKE BEDDING PLANTS.

UNDER this head we have disposed of all the Geraniums, Calceolarias, and Petunias; and our conclusion in respect to them was, that the Scarlet Geraniums should be struck in the autumn; and the greenhouse kinds, as *Quercifolius*, *Diadematums*, and *Uniques*, more especially the latter section, are better from early spring cuttings. Calceolarias to be thus propagated in September, October, and November; and Petunias in July, or as early as the plants are in perfect health and strength, and not too much in the flowering humour. In the spring, Petunias will grow faster into cuttings than Verbenas, under the same degree of forcing heat, and a few plants of any of the kinds will soon make a stock of young plants. Therefore, under all circumstances, I would prefer spring-struck Petunias, provided I could get them early,—that is, to have them all finished off-hand by the end of March.

The Verbenas come next, and *Robinson's Defiance* is still the best scarlet bedder amongst them, for our light soil about Kingston; but I shall get notes from

Kew and Hampton Court, to see what kinds stood the heat of June the best. *Robinson's Defiance* keeps in cold frames all the winter, with us of the Experimental Garden, just as well as the *Calceolarias*: we make all our stock of it in September, and keep them in the same pots, "as thick as they can stick," till the end of February, or later. A few other kinds keep as well as *Defiance*, but some never look healthy in the spring, however cosy we may keep them all the winter. My advice, therefore, to "Peter," his friends, and neighbours, is not to attempt to keep a single *Verbena*, over the winter, more than will be sufficient to get up a stock of cuttings from in the spring, except it be one or two strong kinds, which they have proved already to be within their grasp, and one or two more by way of experiment, say a potful of cuttings of each for the first experiment, and to keep them in the cutting-pots all the winter.

Without trying some experiments, I do not see, myself, what is the real use of a garden at all. The best gardeners in the country try experiments every week of their lives, and, at the end of the longest life, one only begins to see how much more there is to do and to learn. The only secret about experiments which amateurs should know, is this—Never to depend on the issue of an experiment; make sure of your crop, or bed, or anything in hand, and let your experiments be extra.

Be certain you have plants enough in September to cut from next spring, and make as many *Verbena* cuttings, of strong kinds, as you can safely find room for. From that one can learn what no one else could teach so well, as every greenhouse, pit, frame, house, and cellar, has something about it, or between it and the one who looks after it, which is different from every other greenhouse, pit, frame, house, and cellar, on the face of the earth. Therefore, something can be done in all these places which could not be half so well done at another place not a mile distant; but no one knows what those things are without trying, and every trial, and attempt, to obtain an object, is an experiment. But the best plan would be to have all the *Verbenas*, for next year, struck before the middle of September; and, between that best way and the most economical method for keeping the plants over the winter, there are many degrees more than good, better, and best. My own settled opinion, for years, has been, that amateurs who are not well up to the knack of *nursing* little plants, should never attempt to strike their *Verbenas* in the autumn; and that the best way for them would be to put small pots under the shoots, or runners, at the beginning of September,—just as gardeners do with Strawberries for potting,—to shift the strong healthy plants thus made into 48-pots at the beginning of October, and to keep them in these pots, in good, loamy soil, till all the spring cuttings are got from them; then plant them out on the mixed borders, or rockwork, or rustic baskets, or anywhere except in the flower-beds.

BLUE LOBELIAS.—*Speciosa* is the best of them all; the easiest way to have them is to take up a few plants from the beds at the end of August, and to pot them singly into 48-pots, to keep them in these pots all the winter, and to cut from them in the spring for the general crop. The second best way is to make cuttings of them in August, and as early in the month as possible, and to put four of the rooted plants into one 48-pot—the four being equivalent to one plant lifted from the bed. The number of pots to keep over the winter must depend on the quantity of cuttings which will be required in the spring. Two or three pots will furnish a sufficient number of cuttings for a small garden, if the cutting-bed can be got ready by the middle or end of February. But, to guard against

accidents, it is safest to have a few more pots of all the winter store plants, than to run short of any of the kinds. It is a dangerous game to put off making this necessary provision to the end of the season.

TROPEOLUM ELEGANS.—This is one of the very best of all the bedding plants of a soft orange colour, and is best from early spring cuttings. Two or three stout bushy plants of it, kept over the winter, will supply cuttings enough for a large garden, as it roots so easily and grows freely, but is not by any means a rambler. The young plants must not be wider apart than nine inches; it is the only one of the breed, as far as I know, which will make a perfect bed.

The whole race of *Nasturtiums*, or *Tropæolums*, are favourites in the Experimental Garden. While on the subject, let me mention a very old plant which we have bedded in the Experimental these five years, and found most useful. It is an edging plant, and the best edging plant to a rustic bed, or basket, that I know of; it propagates like a weed, and is as hardy as the common field Daisy; but there is a "dodge" in the way of managing it, and by that dodge it blooms from May to October. The dodge is, to part it at the roots early in May, when it is coming into bloom. I parted it with my own hands as late as the middle of last May, and made it into very small bits, in order to fill round a large rustic bed. It stands nine or ten inches above the level of the grass, and yet the heat of last June did not affect it in the least. It is one of the Violets from the Swiss Alps, and from the Pyrenees, where, we are told by one of our lady visitors, it blooms early in the summer, in such large masses as our Buttercups in our fields. I think it is *Viola calcarata*; but there is not an authentic figure of that species within my reach, and I know there are two or three kinds which come very near it; *Cornuta* is one of them, but *Calcarata* is the palest blue of the lot, and our plant suits the best descriptions of *Calcarata* in our books. Generally, *Calcarata* has done blooming by Midsummer, or the end of June at the latest; but dividing it as late as May gives it a fresh start, and it continues to grow, trail, and bloom the whole season. It would make a front line in a ribbon, if the ribbon was alongside of a gravel walk, and *Baron Hugel* Geranium was the next line; no other Geranium would suit it half so well, or at all; and the pale blue, next deep green grass, would never do; but good gravel on one side, and the dwarf dark purple *Horseshoe*, and the bright scarlet, and white eye of the *Baron*, would be just the very thing for *Viola calcarata*. It is in the nurseries, among Alpine plants, and selling at from 6d. to 1s., according to the size. Any nurseryman who may be in doubts about having it true, may get out of the fix by enclosing a sample of his kind, *in bloom*, direct to me, at Surbiton, in a letter.

Talking about ribbons and edgings, reminds me that one of the handsomest and most beautiful edgings I ever saw is now in the Experimental. It is the first line in a ribbon, the *Golden Chain* Geranium being the next line, and the walk in front of the best-coloured gravel. Next year, if we are all spared, we shall have a new line behind the *Golden Chain*, of a plant which has just been named *Harry Hieover*. There is no need to tell the kind of plant just yet. Many of my readers, however, will remember the clever writer after whom it is named. In front of the *Golden Chain* is this wonderful beauty, one plant of the variegated *Alyssum*, and four next plants of *Lobelia speciosa*; then one white and four blue all the way to the other end, each plant six inches from the rest, and not quite so much from the box next the walk. When looking along this line, against the sun, when he is on the meridian of the ribbon, that proportion of white to blue—say one to four—makes the

most charming lilac tinge I ever saw. The author of this line is Mr. Scott, nurseryman, near Crewkerne, Somersetshire. He says, in one of his annual catalogues, that *Verbena melindris*, or any dwarf, creeping kind like it, would make this edging still more beautiful. But the lovely lilac could not be had that way, or without the yellow gravel on one side and the yellow *Golden Chain*, or some yellow leaf, on the other. Still, I should be particularly obliged to any one who would hunt out for me a very dwarf, trailing, bright scarlet *Verbena*, for this very ribbon, next season. Then I would alter it to one white and two blue plants, one scarlet *Verbena*, two blue *Lobelias*, one white *Alyssum*, and so on. The arrangement is so good, that I cannot touch upon any other topic to day.

D. BEATON.

CALLS AT NURSERIES.

MR. W. J. EPPS, THE BOWER NURSERY,
MAIDSTONE.

MAIDSTONE is situated in Kent, that county so famous for its horticultural produce as to be frequently called "The garden of England." Kentish Filberts and Kentish Cherries are as well known and esteemed as Kentish Hops. The town of Maidstone is clean and healthy, situated on the river Medway, and is thirty-four miles by road from London, and rather more by rail. In the neighbourhood there are large Hop plantations, said to be to the extent of 4,500 acres. In this pleasant part of this pleasant county, about sixteen years ago, Mr. Epps commenced growing a few plants in a small greenhouse. This bud of a nursery swelled, burst gradually forth, and grew on to the goodly dimensions I saw on the 20th of this month. It is really interesting to note the progress of these establishments, and to me it is a great pleasure to record the advance they have achieved and arrived at.

The nursery is about half a mile west of Maidstone, on a rising ground. The extent is seven acres, and there is a plot of two acres, to the south of the town, entirely occupied with young fruit trees.

The view from Mr. Epps' dwelling-house is very extensive,—part of the town in the foreground, and swelling, wood-clothed hills in the distance. Turning into the nursery, I came immediately upon the site of the plant-houses. These form a kind of oblong square. On the west side, I noted a good greenhouse, thirty feet by fifteen; then a propagating-house, for hard-wooded stove-plants; a *Geranium*-house; and a good stove plant-house with a span roof. This stove is fifty feet by twelve feet, and in it I saw good specimens of *Stephanotis floribunda*, *Allamandas*, *Ixoras*, &c. The north side of this square is occupied by one of the best Heath-houses I have seen. It is, as a matter of course, span-roofed. No other form will grow Heaths well. Air is given at the sides, top, and end by moving the lights. The top slides up and down, and the sides push out—an old-fashioned, but certainly effective mode of giving air. Then, on the east side, there is a span-roofed house, seventy feet long by fourteen feet wide, entirely filled with greenhouse Azaleas, both in a young state and specimens of various sizes,—all clean, fresh-looking, healthy plants. Mr. Epps adopts the plan of keeping all his Azaleas on clear stems, from six inches to two feet high. In order to form them into specimens, the lower branches are gradually brought down to the rim of the pots, and even lower, so that the stems are completely hid. It may be asked, what is the use of the stems, if they are to be covered? An experienced Azalea grower would answer, the plants with stems are sure to live

longer than those that have a number of branches springing from a stump close to the soil. Such plants die off suddenly at that point,—that is, just between the earth and the air. Now, had they been trained up to a single stem, or, what is still better, grafted on a strong-growing variety, as a stock such as I observe here, they would not have died so suddenly and mysteriously. The ground within this square is occupied, at the lower end, with beds of flowers, edged with earthen tiles. In the centre is a large round tank of water. This part looks neat and quite respectable. Beyond this tank and beds there is a long, low, propagation-house, sixty feet by nine feet: a walk runs down the centre, dividing the inside into two parts; one is occupied with a tan-pit, covered with frame-like lights. Under these lights, the work of propagation is successfully carried on to a great extent.

Adjoining this propagating-house is a second house, of the same size and form, but divided into two parts. The first I saw filled with a healthy stock of *Geraniums*, and the further part with young soft-wooded stove plants—such as *Gloxinias*, *Achimenes*, *Tydeas*, &c.

Passing beyond this square of houses, I next saw a square of ground hedged round and entirely filled with frames, in fifty-foot lengths. These frames contained the stock of young Heaths, all of the more rare kinds,—such as *Tricolors*, *Aristatas*, *Irbyanas*, *Jasminifloras*; also a considerable quantity of hybrids. One especially, named *Eppsii*, is a splendid variety: I was told its parents were *Tricolor Wilsonii* and *Aristata major*. The tube is nearly round; near the stem it is of a brilliant colour, almost scarlet, and the rest of the tube is of clear flesh colour. Another seedling is named *Oblata purpurea*, the origin of which is not so well known; but the seed itself was saved on *Erica Clowesiana*, supposed to have been impregnated with the pollen of *Oblata*. This also is a truly splendid Heath: the tubes are large, and very oblate, or swollen, at the base: the original *Oblata* is pure white, but this variety is beautifully suffused with plum colour. A third seedling raised here is very fine. It has been named *Maidstoniensis*. It is a hybrid of great merit, and flowers both early and freely, producing flowers of a good substance, and bright, rosy-red colour. There were several other seedlings in flower, but inferior to the other three, though quite superior to any of the older varieties. At the east side of this square, I noted a deep pit, full of half-grown specimen Heaths, just such as I should buy, if I had convenience to grow specimen Heaths to a full size.

The soft-wooded plants are next to be noticed. They are propagated in a house similar in shape and size to the one above mentioned. This house has its adjuncts, a cool pit, and many frames to harden off the plants in, as they are potted off out of the cutting pots.

The reader may be certain that, with all these conveniences, there are thousands of plants propagated every season, and distributed over various parts of the country as required.

The out-doors nursery, I observed, is laid out most judiciously for business. A gravel walk, seven feet wide, stretches across from side to side, and is crossed itself, at right angles, by a gravel and a broader grass walk. On each side of these spacious walks, I observed specimens of choice ornamental trees and shrubs had been planted. This is an excellent plan. A purchaser can be shown at once what his trees and shrubs that he may order will come to in a certain number of years. The turf walk has its borders planted with the choicest *Coniferae*. Some of the older species have made considerable advance. *Deodars* have reached the height of from twenty to twenty-five

feet, and are well branched down to the ground. *Pinus excelsa* grows here like a Poplar, in respect to speed; last year several of them made shoots a yard long, and ripened their wood well, so that no frost has injured their form. I observed, that the Mount Atlas Cedar grows here much quicker than its congener, the Cedar of Lebanon.

The subsoil of this nursery is limestone rock. Hence, all sorts of stone fruits thrive well, and ripen their shoots every season to the very top of each branch. The quarters behind the ornamental borders are, consequently, filled with young fruit trees, in various stages of growth. Now the men are busy budding the proper stocks with Peaches, Nectarines, Apricots, Plums, Pears, Apples, &c.

Around these quarters, I saw a broad border of shrubs of various kinds (evergreen), as well as those that shed their leaves. I also noted some large flats of Roses, but the soil here is too warm and light for the Rose. Mr. Epps has a larger nursery at Ashford, about sixteen miles distant, where, I am told, the Rose thrives admirably. He also has a seed farm of a great extent, and is very successful in getting his seeds true to their kind. The crops of seeds of Onions, Carrots, Peas, &c., are looking well and promising, and, if there is a tolerably dry autumn, we shall have garden seeds good and cheap next season.

The harvest had commenced in Kent pretty freely. Wheat, Oats, and Barley appear to be above an average crop. Beans are rather short in the straw, but well podded. The season in this part of the country is certainly a fortnight or three weeks earlier than in Lancashire. I hear nothing of the blight in Potatoes, though fears are entertained that the showers that were falling when I was there would bring it on.

T. APPLEBY.

THE SORGHUM SACCHARATUM.—On the afternoon of the 4th of April, we paid a visit to Mr. C. W. Croaker's Sorghum plantation, for the purpose of witnessing the process of sugar making. In this, however, we were disappointed, an accident having just previously happened to a portion of the machinery, whilst crushing the second stalk, which prevented further operations. Mr. Croaker afterwards showed us several varieties of this plant now being grown by him. The first was the Sorghum Saccharatum, or Chinese Sugar Cane, of which he has two acres under cultivation, the whole of which he intends using for sugar making. This plant, notwithstanding its being grown on high ground, and the long drought which has prevailed this season, is still quite green and healthy, presenting a pleasing contrast to the parched-up land by which it is surrounded. The stalks have in some instances reached a height of nine feet, measuring an inch in diameter, and are very sweet to the taste. Another variety is the Zulu Kaffir Imphee, of which there are five plants, obtained from seed furnished by Mr. W. Archer, the Registrar-General of Victoria, a gentleman who has very actively exerted himself in introducing this plant into general cultivation throughout the Australian colonies. Each of these plants has eleven stems, the leaves of which are broader and stronger than the Sorghum. Owing to the dryness of the season, but one of these presents any appearance of seeds; and, owing to the same cause, it can hardly be expected to reach perfection this year. The next variety was what Mr. Croaker terms the Concord Millet, a plant strongly resembling the Imphee, and which throws from three to six stalks from one root. In addition to its being much sweeter in taste than the Imphee or Sorghum, it produces a large quantity of seed—in some cases as much as eighty bushels to the acre. Mr. Croaker informs us that this was first introduced into the colony in the year 1829 or 1830, by an officer of one of His Majesty's vessels, from the coast of Africa, since which time it has been grown by members of his family on the Lachlan. He has also a few plants of the red seed Millet, which, though saccharine, is not likely to be nearly so productive as either of the other descriptions.—*Bathurst Times (Australia).*

A SUPPLY OF CABBAGE.

Few things afford greater scope for getting wrong, than providing for the wants of another year. Cabbages, Cauliflowers, and Peas may be sown so early as to be useless; or, if too late, there is the unpleasant reflection of being behind one's neighbours. After all, there is always a something left to chance,—a something over which the season exercises so much influence, that positive rules cannot well be laid down at all times.

In certain springs Cabbages have a tendency to run to seed, which they have not at others, even though they may have been sown exactly on the same day the preceding autumn. A something peculiar in the passing winter tends to hasten on the plant to the point intended for it to fulfil—that is, the perfection of its seed for its own reproduction. This result is what—in the Cabbage, Cauliflower, and some other vegetables—the cultivator tries to avoid. A speedy flowering is very well for plants of an ornamental character, but a luxuriant growth is wanted in the Cabbage tribe.

Now, to accomplish this, long and well-directed cultivation has done much; originally only an annual, bearing a few loose leaves, not much larger nor more useful than those of the wild Mustard or Charlock, the parent species of our garden Cabbage has passed through so many improvements, that it resembles its original condition only in the botanical structure of its flowers, and some other points; and one of the principal features attempted, and in a great measure attained, is that of checking the tendency it has to run to flower in the spring; for, like most cruciform flowering plants, it blooms early in the season, and, of course, is useless when it does so before attaining that proper useful size which it ought to do.

A careful selection of the best plants for seeding, and of those which show the least tendency to do so, has been so often repeated with judicious skill, that Cabbages, of greater size and age than formerly, will stand the winter without "bolting," as the common name of running to seed is called. And be it remembered, that when they pass the critical period in spring, which tries their inclination, there is little danger afterwards, as all the mischief is done in a few days.

To sow the seed, and afterwards tend the plants, in such a way as to get them as forward as possible early in spring without bolting, is one of the points in horticulture over which many stumble; as an injudicious anxiety to be early may prompt an inexperienced hand to sow too soon, while a contrary effect is produced by delaying it too long. Nevertheless, with all the care that can be taken, it will now and then happen that mistakes will take place, as the seasons are not all alike severe, and varieties of the plant in question differ, as well as the situation and other things. But there are some points in the culture of this plant which it is advisable to bear always in mind. The first is, never to depend entirely on one sowing; and another is, to be careful to sow only the best variety that can be had; for, common as this vegetable is, it is, after all, the most useful of any in the garden,—a good breadth of it affording a something every day in the year; and, although the humble cottager is very often able to boast of his Cabbages being superior to those of his more affluent neighbour, it chiefly arises from greater care in selecting the variety grown.

As practical details are more useful than general principles, it is proper here to say, that for favourable situations in the south of England the first week in August is early enough to sow Cabbage for the principal crop of the following year, while it is even ad-

visible to sow a considerable portion later than that—say from the 10th to the 15th. The long growing autumn in these districts advances the plant so far, as to render it liable to run in the following spring if sown earlier; but, for less favoured situations, sowing must be made proportionately earlier. In the northern part of Yorkshire, I have known Cabbage seed sown by the 10th July, and then not run to seed; even earlier than that has been sometimes accomplished, but it is not advisable to trust to it so early, except for a small portion; successional crops may be sown at intervals of a few days apart; the final crop of all may be sown as above, about the middle of August in the central part of England, and later than that on the south and north sides of it.

It is necessary only to sow such a variety at first, as resists the influence of running to seed in early spring. Some of the kinds in cultivation are more likely to do so than others. In a general way, extensive growers of Cabbage for the London and other markets, grow their own seed, and select only such plants for seeding as are possessed of the properties most wanted. The largest kind is not necessarily the earliest, neither is it the one best adapted to stand the winter; consequently, it is advisable to grow two or more kinds. The names are, also, very often little more than a mere local term, intelligible only in the immediate neighbourhood where they are grown, as such or such a one's Cabbage; and very often the party whose name it bears is in humble circumstances, and known only to his fellow workmen, and a limited circle. Seedsmen, certainly, have adopted their names, because there seemed no other to give to the variety in question; and, as new names supersede old ones, there is little use in giving the name of a variety, that, in all likelihood, may be eclipsed by a superior one next year: it must be borne in mind, also, that many of the best kinds are not dignified with a name at all, the grower being contented to call it "his kind."

Independently of sowing Cabbage seed at a particular time, care must be taken to ensure its germinating at that time as well, otherwise the object of sowing it then is defeated. In very dry weather it will not germinate well without some artificial aid, the worst of any being, perhaps, heavy waterings and exposure to the full sun, as a sort of hardening of the surface then takes place, through which the young plants cannot make their way. A better plan, is to scatter the beds thinly over with fine leaf mould, that has been sifted; over that, lay some old pea-stakes, or other boughs of that kind, and either cover the beds with mats, to be taken off at night, or with some other partial shading material. I have used the old Pea haulm with advantage, just spread out very thinly over the stakes, and have found the plants to vegetate very well with only one watering. As the only object of shading is to enable the young plant to save itself while in the act of vegetating, it may be proper here to observe, that attacks by the Turnip fly, and other enemies, must be met by dustings with lime, or counteracted in some other way,—wood ashes is still better than lime, as likewise is soot. As the young plants are very susceptible to such misfortunes at a certain time, it will be well to take care not to let them be molested to any hurtful extent, until they have advanced a little, when they will do very well for themselves, and the shading and other artificial helps may be dispensed with.

In some places, young plants of the Cabbage tribe are much infested with a grub, which, boring the stem a little underground, forms an ugly and injurious enlargement, often fatal to the plant, or, if not so, very hurtful to it. This evil is, in a great measure, prevented by digging charcoal ashes into the ground they are sown in. Lime, or a little of the waste from the

gas-house, is equally useful, but the latter must be used with caution. Wood ashes are, however, quite safe, and an excellent manure as well.

I cannot conclude this article without calling the attention of all young gardeners to the large breadth of Cabbage grown in the neighbourhood of London, for the use of the great metropolis, and the skilful way in which it is done,—not a bastard to be seen in a plot of, perhaps, an acre or more, while it is often difficult to discover even a shade of difference in the kind grown. This result is only attained by the means mentioned above,—that is to say, by carefully selecting seed of the purest kind only, and to have this perfect. Many extensive growers grow seed for themselves, and, it is needless to say, with the best results; and to the amateur who wishes to excel in any department of kitchen gardening, we may say, follow their example; but at the same time take care that, when any plant in the Cabbage, or Broccoli, line is in bloom, do not let anything else of a like nature be in flower near it. Consequently, one of these articles is as much as can be saved in any one year; but the seed will keep three or four seasons with little injury, only under adverse circumstances old seed does not germinate so well as new. This, however, has been treated of before.

J. ROBSON.

PEARS IN LANCASHIRE.

I WAS lately informed that the writer of the following account—of Pears suitable for the climate of Lancashire—was a gentleman that took a delight, and great care, in the culture of this fruit; I, in consequence, wrote to him, requesting the favour of a reply, and an account of his experience in Pear culture, which is so excellent, that I am very much obliged to him; and the readers of THE COTTAGE GARDENER, who take an interest in fruit culture, will also be thankful for the information. If growers in the different counties, or districts, in England, would send me such a report of their experience, and names of the varieties that succeeded best in their different localities, we should have such a mass of information as would be highly interesting, and eminently useful. T. APPLEBY.

Some five-and-twenty years ago a nurseryman called upon me for the payment of a bill, and having just read an account of the new Flemish Pears, which had then been recently introduced into this country, I asked him if they were really as good as they were represented to be. He replied, that he believed many of them were; but that his business being to raise trees for sale, rather than to keep them to fruit, he could not speak of the quality of many of them from his own knowledge; but there was a gentleman (whose address he gave me, and which I wish I was at liberty to mention) who obtained every new sort as it came out, and he had no doubt he would give me all the information I wanted. I accordingly wrote to that gentleman, requesting information as to the fertility and quality of various Pears, and also asked him to give me this information on any others he might possess which deserved cultivation. I heard nothing for three weeks, and had concluded he was a man who did not choose to correspond with a stranger; but at the end of that three weeks I received a larger hamper, containing about thirty sorts of Pears, and an exceedingly courteous and obliging letter, the purport of which was, that he had duly received my letter; but that tastes varied so much, that what he thought very good, I might think indifferent, and he had, therefore, waited until his Pears were ripe, and then sent the fruit themselves, with a label attached to each kind, with his opinion on the fertility, quality, and hardness of each, and concluded by offering me grafts of all such as I liked the following spring. I availed myself of his liberal offer; and from that time have been a grower of Pears.

I ought, however, to state, that I have not much experience in growing them upon standard trees; for, having plenty of wall room in the shape of a large factory, I planted every

available spot with a fruit tree of one kind or other, and have had no reason to complain of my want of success. By the bye, I would recommend to all owners of factories, in suitable localities, to do as I have done. There is nothing about the place which I am more proud of showing to visitors than my mill windows, filled with fine fruits—Pears, Plums, Apricots, and Cherries; for, although these windows are never fastened, there is never one stolen, which says a great deal for the honesty and good feeling of the people. The fact is, if you trust work-people, you make them trustworthy; if you treat them as if they were rogues, you go far towards making them so.

I am, however, forgetting what I sat down to write about, which was the sort of Pears suitable for this part of Lancashire:—

Of the *Jargonelle*, as every one knows it, I say nothing more.

The *Summer Rose*.—A Pear exceedingly like an Apple in shape; ripe at the end of August; a great bearer; with a crisp flesh, and pleasant flavour, if not allowed to become too ripe.

Hessel (or *Hazle*) Pear.—Ripe in September. A hardy tree, and great bearer, but apt to get mealy when grown against a wall. Better on a standard, and still better if grafted on a Thorn stock.

Summer Bon Chrétien (or *Catherine*) Pear.—Ripe in August; tolerable bearer; with a crisp and pleasant flavour. Better on a standard than a wall.

Yat.—Good bearer; ripe in September; bears well as a standard. Good second quality.

Beurré de Capiaumont.—The most fertile bearer I have; never failing to have a crop, except when it has been exhausted by over-cropping the year before; and of first-rate quality, when properly treated after gathering. If it be taken into a cool fruit-room, and kept there with an idea that by that means you will extend the season of maturation, it becomes *turnipy*, and never acquires any flavour; but if, when gathered, it is immediately hung up in a warm room (not below the temperature of 60° Fahrenheit), it acquires a high flavour, and becomes one mass of juice. To extend its season, I gather half my crop the last week in September, and the other half two or three weeks later. I ought, however, to observe, that the fruit, when maturing, requires frequent and careful examination, and should be eaten as soon as it yields readily to the pressure of the thumb, for it will not keep more than a few days longer when it has arrived at this stage.

Louise Bonne de Jersey.—Ripe about the same time as the *Capiaumont*. A great and constant bearer against a wall; the fruit large, melting, and excellent. With me it cankers as a standard tree; but I have not tried it on a Quince stock, upon which, I am told, it succeeds much better than on the Pear.

Beurré de Bosc.—Ripe in October; fine fruit, but only a middling bearer, and the quality only second-rate, in my estimation, as it never becomes melting.

Dunmore.—Good bearer, both on the wall and on a standard; very variable in quality, but often of first-rate excellence; ripe the end of September.

Brown Beurré.—Not worth cultivation, as it never produces a crop. The same may be said of the *Aston Town* and *Chaumontel*, the latter of which is here of very indifferent quality; as well as the *Crassane*.

Marie Louise.—The best Pear I know; rather shy as a bearer; but some observations I have made induce me to think that its fertility may be increased. I have several trees of this kind, but one which has been grafted upon a *Green Chisel* bears much better than any of the others, although they grow on the same wall, and I find that this increase of fertility is produced in other kinds, besides the *Marie Louise*, when they are grafted on the *Green Chisel*. This applies particularly to the *Forelle*, which I have not been able to fruit as I could wish on any other stock. On the *Green Chisel* it bears well, and is an excellent Pear. Ripe in November.

The *Moor-fowl Egg*.—Exceedingly like the old *Swan's Egg*; quality first-rate. A hardy bearer when it blooms; but does not bloom freely here. It is a month earlier than the *Swan's Egg*.

Seckel.—A small Pear, very hardy, free bearer, producing

its fruit in clusters; quality first-rate; but when arrived at maturity it will not keep more than a few days, if gathered. I, however, prolong its season by allowing it to hang on the tree, which it will do after the leaves have fallen, and until it is exposed to the frost.

Passe Colmar.—Hardy bearer; does not bloom as freely with me as I could wish, but when it does, the fruit sets well; quality first-rate; high flavoured and melting; ripe, November and December.

Napoleon.—An excellent Pear; tolerable bearer; but neither so good in quality nor so good a bearer as the *Capiaumont* or *Louise Bonne de Jersey*.

Glout Morceau.—A free bearer, and a good Pear in December and January. It has, however, although perfectly melting, a tendency to what (for want of a better term) I call a *turnipy* flavour.

Duchesse d'Angoulême.—An indifferent bearer, and of very ordinary quality; not worth growing, although a large, fine-looking Pear. The same remarks applies to *Williams' Summer Bon Chrétien*, the *Flemish Beauty*, and *Beurré Diel*.

Easter Beurré.—An excellent bearer; ripe from January to March; but the quality is not so good with me as I find it represented in the published accounts I have read.

Beurré Rance.—A great bearer with me, and of first-rate quality from an east wall. I have, however, found great difficulty in bringing it to a state of perfection. When I first grew it, I hung it up, as I did my autumnal Pears, in a warm room, but it dried up without becoming melting. I then put my stock in a large earthenware jar, or mug, and kept them covered up, to prevent evaporation. On looking at them in about a month, I found them all rotten. The year after I again enclosed them in the jar, still keeping them in a warm room; but at the end of every week they were carefully taken out, and spread on the floor. After being carefully freed from the moisture, which had condensed upon them during the week, they became high flavoured and perfectly melting by this treatment, which I still adopt, although it does not enable me to prolong the season of eating far into the new year, as seems to be done by some of the growers of this variety. But whilst the *Beurré Rance* is so good with me, some of my friends in Wharfedale find it utterly worthless; but theirs is a dry alluvial soil; whereas mine is a stiff, obdurate clay, very little better than a bed of puddle.

On reading over what I have written, I find that I have omitted from the list *Thompson's Pear*; ripe in November; bears well against an east wall; variable in quality, but generally first-rate.

In the above list I have only detailed my own experience and my own opinions as to quality, which, for aught I know, may be quite at variance with the tastes of many other persons.

P.S. You will observe, I have mentioned some that I have found bad, and unsuited for this part of Lancashire, as it may enable persons to avoid a waste of time which would be incurred by planting them, particularly as some of them are in great repute.

I would send you a list of Apples, but think I have said enough for the present.—THOMAS GAMETT, *Clitheroe*.

[We shall be much obliged by the list of Apples; and further obliged by a statement of the soil; whether lowly or highly situated; and on what aspects the Pears grow.]

THE CABBAGE BLIGHT.—We regret to observe that a species of fly is making extensive ravages among all plants of the Cabbage tribe in the gardens around Goulburn. These insects resemble the aphid, which infects the tops of Windsor and Broad Beans in England. In a very short time they change into flies, which in their turn produce fresh colonies of the aphid; propagation going on with a rapidity which appears to defy all means yet adopted for the extirpation of these destructive pests. We have seen several gardens in this vicinity in which fine beds of Cabbages, Cauliflowers, and other plants of a like nature, have been rendered quite useless; and we are assured that one gardener alone will suffer a loss of £50 this season from the Cabbage blight. If any of our readers be aware of a remedy, they would confer a benefit by making it known.—*Goulburn Chronicle (Australia)*.

MEETING OF THE ENTOMOLOGICAL SOCIETY.

THE July Meeting of the ENTOMOLOGICAL SOCIETY was held on the 5th instant, the chair being occupied by the President, Dr. J. E. Gray, F.R.S., &c. Amongst the donations to the Society's library, received since the last meeting, were announced—The publications of the Royal Society, the Society of Arts, the Royal Society of Science of Brussels, together with the classed Catalogue of the Educational Division of the South Kensington Museum, one of the most remarkable productions of the present day, and to which the Society had contributed, by the description of a small typical collection of British insects, belonging to the different orders.

Mr. Frederick Smith exhibited a case of insects of different kinds (chiefly *Lepidoptera*) recently sent from Sierra Leone, in fine condition, by Mr. Foxcroft, and of which descriptions were read by Mr. A. White. It did not appear that any very important additions to our knowledge of new species had been made by Mr. Foxcroft: but he had forwarded interesting materials for a knowledge of the habits of many hitherto described species, especially among the *Hymenoptera*, of which he had sent a number of nests, several of which were, however, very similar to nests of the same, or allied species, sent from Natal by Herr Guenzuis. Among them was a leaf covered with finger-like galls, which were stated to have been formed by a black species of Thrips, being the first instance in which gall-making habits had been ascribed to that family. Mr. Francis Walker, however, stated that he had been led to believe, that the small erect galls, found so commonly on the leaves of Lime trees, were also caused by a species of Thrips.

Illustrations were also forwarded by Mr. Foxcroft of the habits of the green Ant, *Formica smaragdina*, which agreed with Mr. Jerdan's account of the habits of the ants in India. The nest of a species of *Belonogaster*, formed of a white material, was also exhibited.

Mr. Westwood exhibited typical specimens of *Microphysa pselaphiformis*, and of the insect found in ants' nests by Mr. Tanson, exhibited at the last Meeting, and which proved to be the *Microphysa myrmecophila*. The latter insect, however, was certainly not congeneric with the old type of the genus.

Mr. Stainton exhibited the mining nest of a species of *Nepticula*, from Bahia, formed in the leaves of the large-fruited Guava, thus proving that the *Microlepidoptera*, in tropical climates, agree in their habits with those of our own country. He also exhibited *Anthrocera minos*, from the western coast of Scotland; and *Cemistoma lotella*, which latter exhibition led to an extended discussion on the modification of species, the existence of permanent varieties, or subspecies, &c., in which Dr. Gray, Messrs. Westwood, Stainton, and others took part, the subject being one of considerable interest with reference to the specific rank of many supposed species, not only of insects but of plants.

Mr. Baly read a communication on the genus *Doryphora*,—a handsome group of Plant-Beetles, natives of South America, and comprising some of the largest species of Chrysomelidæ.

Mr. Samuel Stevens gave an account of Madame Ada Pfeiffer's sojourn in Madagascar, which had, unfortunately, not proved so advantageous as her former travels in the islands of the Indian Archipelago.

Mr. Adam White described a species of *Nochia*, found in large numbers in Ceylon by Mr. Mitford, where it occurs in clusters on the Coffee plants, which are often covered with it. It is described as being grey, with black spots, and the underwings black with white fringe.

Mr. Tegetmeier communicated to the Society the description of a new kind of observatory hive, in which the difficulty found in ordinary observatory hives, arising from the sides, or back, being formed of a single sheet of glass (which was found too cold in the winter), was avoided, by the employment of double plates of glass, placed at a little distance apart. He also mentioned an experiment he had lately made, with a view to the solution of the question, as to the normal form of the cell of the hive bee. Having fixed a solid piece of wax to the underside of a bar of a bar-hive, instead of the ordinary piece of guide comb, he found that the bees formed cylindrical cells within the mass of wax; and he contended, that when these cylindrical cells came into close contact with each other, they assumed the hexagonal form by pressure, a statement which

Dr. Gray illustrated by saying, that he had tied a bundle of vermicelli together, and, having boiled it, he found, that when tightly tied together, the cylinders assumed a hexagonal form. Mr. Tegetmeier further contended, that the cells are always hemispherical at the base at first; and that, although the inner sides may be angulated, the outer sides of the outermost row of cells, in a comb, are rounded, which, when subsequently an additional row is formed, become hexagonal by the lateral pressure of the new cells. He, in fact, denies that there is any geometrical instinct in bees. This view of the subject, although supported by Dr. Gray, was opposed by several of the members, and gave rise to an animated discussion.

REMEDY FOR THE ROBBING OF BEES.

IN the early part of May, I observed that one of my weaker swarms was attacked by its more powerful neighbours, and was rapidly losing its valued treasures. The bees were rushing in and out with fearful rapidity, presenting an appearance at a distance not very dissimilar to the issuing of a first swarm.

I plainly saw that something must be done, and that without delay, or my little colony must fall a victim to the ruthless invaders.

Never having had a case of the kind before, I could not avail myself of past experience, and so, with a feeling of confidence, took council with my old guide, that had thus far safely led me through the mazy avenues of apiarian experience—Quinby's "Mysteries of Bee-Keeping Explained." And then, as the sequel proved, I found precisely the thing needful.

In discussing the subject of robbing, Mr. Quinby says:—"As for remedies, I have tried several. The least trouble is to remove the weak hive in the morning to the cellar, or some dark, cool place, for a few days, until at least two or three warm days have passed, that they may abandon the search. The robbers will then, probably, attack the stock on the stand. Contract the entrance of this in accordance with the number of bees that are to pass. If strong, no danger need be apprehended."

He further adds on the next page:—"Another method is, when you are sure a stock is being robbed, to take a time when there are as many plunderers inside as you can get, and close the hive at once (wire-cloth, or something to admit air, and at the same time confine the bees, is necessary); carry in as before, for two or three days, when they may be set out. The strange bees thus enclosed will join the weak family, and will be as eager to defend what is now *their* treasure, as they were before to carry it off. This plan succeeds about four times in five, when a proper number is enclosed. Weak stocks are strengthened in this way very easily; and the bees being taken from a number of hives, are hardly missed. The difficulty is, to know when there are enough to be about equal to what belongs to the weak stock; if too few are enclosed, they are surely destroyed."

Now, as mine was a weak swarm, I concluded to try the latter method, hoping thereby not only to prevent further robbing, but also to strengthen the swarm. On checking the operations in that hive, by closing the entrances, the greedy little fellows flew around in wild excitement, still intent on plunder, and made a descent on several adjacent hives, when, by the aid of contracted passages of ingress and egress, they were enabled to repel their assailants, though not without a considerable sacrifice of life; and thus my apiary was soon restored to its wonted harmony.

The hive in question was that evening removed to the cellar, from whence it was taken after the lapse of three days, since which it has been unmolested, and by the operation was transformed from a puny swarm to one of my most vigorous ones—a striking illustration of the remark, "that evil designs are often thwarted that good may come therefrom."

My success was so complete, and so easily achieved, that I felt constrained to present it to your readers (though nothing new), believing there is no better way, when prudently managed, of disposing of this casual annoyance.—P., *Chatham Center, N. Y.*—(*American Country Gentleman.*)

[There is nothing very new in the above paper. The plan recommended of removing the attacked hive is often useful; but in *this country* it would only be in exceptional cases, that strange bees could be caught in sufficient numbers, to strengthen materially the weak or plundered stock.]

NOTES ON THE DEVELOPMENT OF BULBS AND TUBERS.

By THILO IRMISCH.

(Abridged from the German original.)

(Continued from page 261.)

Fritillaria imperialis, L. (Crown Imperial.)

THE well-known thick, somewhat depressed, bulbs of this plant possess at the time of flowering, strong, generally branched, roots. The broad scales of which the bulb is formed are few in number, and very fleshy and juicy; they are, more or less, confluent below, but they are not soldered together into a solid mass. Their free upper margin is, in contradistinction to the lower fleshy part, originally very thin. This, however, soon withers and leaves a scar. In the axis of the uppermost scale, in front of the flower-stem, stands the young primary bulb (c). It is formed of from five to seven

furnished above with leaves and flower-buds. There is also, already, in the axil which is formed by the uppermost scale of the axis with the peduncle, the bud of the primary bulb which is to blossom in the second following spring; and there is frequently another in the axil formed by the penultimate scale in the flower-stem. It flowers occasionally at the same time with the first bud, so that there are two flower-stems in one plant. Many years, however, sometimes pass before it flowers, and it becomes consequently, when the axis which originally united the two buds is withered, entirely separated from the principal bud.

The composition of the whole bulb is most easily ascer-

tained. A short time before flowering, at the end of March, the fleshy scales belonging to last year's axis are still present, and the parts on the main axis of this year's flower-stem are as follows: the rather fleshy primary scale (Fig. 3, b), one alternating with it, and then about six short membranous scales (d). All these, which are distinct from one another, vanish almost entirely after the flowering is over. After these follow from four to six leaves (c) whose basal portion is fleshy, and the lamina membranaceous and white. The lamina is shorter in the outer leaves, in the inner gradually longer, being often five to six inches long. The basal portions are already confluent, at least in the lower leaves. After flowering the laminae wither very rapidly, and leave a scar on the upper margin of the surviving base. The Crown Imperial grows so rapidly in spring that the nutriment stored up in the scales of last year's bulb is soon exhausted, and, in consequence of the very delicate texture of their cuticle, they vanish almost entirely after flowering, and do not form, as in many other bulbs, a dry skin. During and soon after flowering the scales of the active bud attain their full growth, and the bulb is then again in the same condition in which it was before, since the bud at the base of the flower-stem is already more developed.

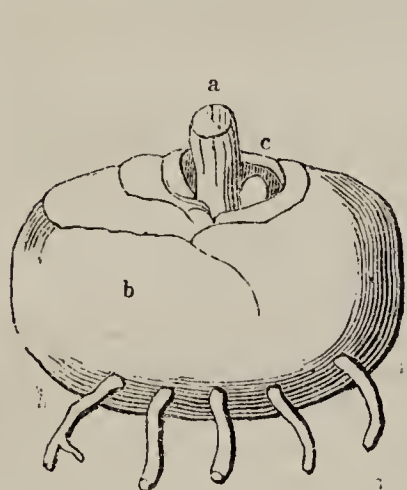


Fig. 1.



Fig. 3.

Fritillaria imperialis.

Fig. 1. Bulb in autumn, about half the real size.
a. old peduncle.
b. scaly coats of bulb.
c. bud which is to flower in spring.

Fig. 2. Vertical section of do.,

with the bulb c, Fig. 1, more advanced.
d. basal axis.

Fig. 3. Main bud a short time before flowering.
b. primary fleshy scale.
c. second do.

d, d. short membranous scales.

c, c. leaves with fleshy bases, which form the bulb destined to nourish the young bud during the autumn and winter.

scales, at present distinct from one another. The first of these, on the dorsal side, which is turned towards the peduncle, is tolerably flat, with two angles.

There is generally in autumn the short dry stump of the last spring's flower stem in the centre of the bulb; which is easily drawn out, and frequently carries with it a part of the base of the axis, so that the bulb appears perforated. On the contrary, the scales of the old bulb, which belong to the same axis with the old peduncle, remain in organic connexion with those of the young bulb, which they enclose. Fresh roots spring at this time from the basal axis of this young bulb, perforate the scales of the old bulb, and form a circle round their lower half (Fig. 1). The roots of the past spring which belonged to the same axis with the withered flower-stem are entirely dead. The young bulb (Fig. 1, c; Fig. 2) contains in autumn all the parts of the plant which is to blow in the following spring: the scales of its basal axis have become stronger; they enclose in their centre the still short and thick peduncle, which is naked at its base, but plentifully

Hyacinthus Orientalis, L. (The Garden Hyacinth.)

The following description applies to the plant at the time of flowering. The bulb is formed of numerous very broad concentric sheaths, which exhibit a scar in consequence of the decay of their margin. Of those also (Fig. 1, a) which are seated below the short remnant of the last year's flower-stem, many are still unexhausted, and firm and juicy. Remains even of the two-year-old flower-stem are found between the sheaths, and single sheaths without it are still fleshy. Above the last year's flower-stalk (Fig. 2, c) are found some white broad sheaths (b). There are from three to six of these; the outer ones, at the time of flowering, are occasionally somewhat perished at their tips. All are fleshy below; only a small portion of their upper margin is membranaceous.

These are followed immediately by many perfect fresh leaves, generally from five to twelve. They have no closed sheaths, and are arranged spirally.

In the axil which is formed between this year's flower-stem

and the innermost leaf is found the main bud which is to produce the next year's blossom. It has many scales externally, of which the outermost stands with its back to the peduncle. The succeeding leaves are still very small. There is also frequently a second bud as large as the first in the axil of the penultimate leaf. In this case the plant bears in the following year two spikes of blossom, of which each, since they belong to different axes, is surrounded by its own tuft of leaves. This must not be confounded with the case in which two flower-stalks spring from the same tuft close to each other; it will then be generally found that the second, which expands later, stands together with the young main bud in the axil of the uppermost leaf.

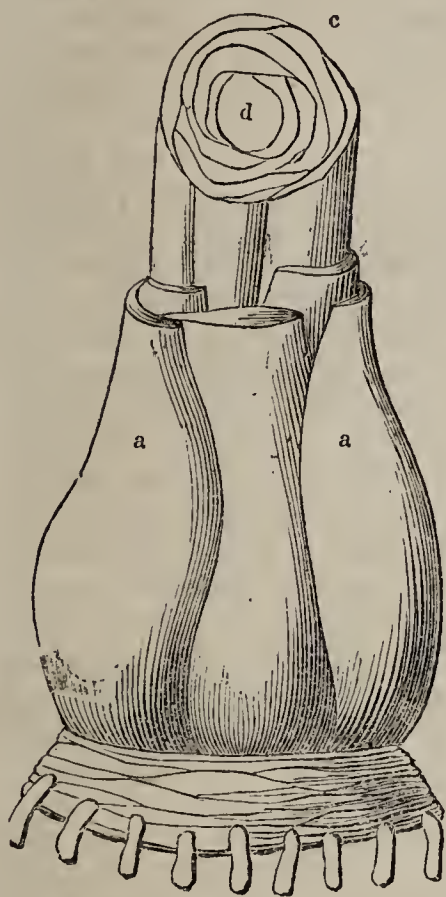


Fig. 1.

Hyacinthus Orientalis.

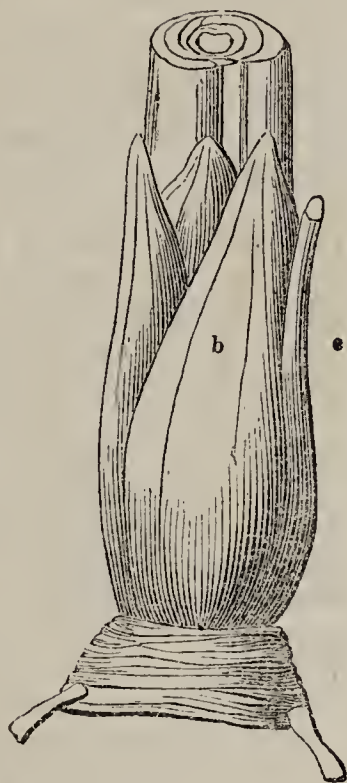


Fig. 2.

Fig. 1. Bulb with the outer sheaths removed, just after flowering.

- a. base of sheaths whose upper margin has perished, leaving a scar.
- c. leaves cut across.
- d. peduncle.

Fig. 2. All the sheaths are removed below the last year's peduncle.

- b. scales above the peduncle.
- c. last year's peduncle.

After the time of flowering the basal portions of this year's leaves extend and become broader and more fleshy, and the lamina dies off at a definite point. This year's roots, also, and the lower part of the main axis perish, and separate easily from the still vegetating portions of the bulb. By autumn the young bulb has nearly attained its full growth, and the new flower-stem is visible; new roots also are sent forth at this period.

On the main axis of a bulb which has blown several years in succession, we find, in general, without reckoning the dead and dying sheaths, the formations of two previous years (I. and II.), of this year (III.), and the commencement of that of the year following (IV.). This year's plant (III.) at the time of flowering has not absorbed the contents of the leaves destined for nutriment, situated on the two-year-old portion of the axis (I.), not to mention that of the previous year (II.). In this it differs from the bulb of *Ornithogalum nutans*, where, at the time of flowering, the scales of the two-year-old portion of the axis are exhausted. In every year's growth of the main axis, many new sheaths are formed (which serve as reservoirs of nutriment, and at a later period, when the tips are dead, cannot be distinguished from the sheaths which have arisen from the basal portion of the leaves), and then numerous leaves; whereas in *Ornithogalum nutans* there are only leaves, in which respect the Hyacinths have more resemblance to *Ornithogalum umbellatum*, where at least the first leaf of a new axis assumes the form of a scale. The main axis of II. is the lateral axis of I.; III. the lateral axis of II., and IV. of III. The simple roots do not spring from

the axis of the blooming plant as in *Gagea*, *Fritillaria*, &c., but from an older part of the main axis. The offsets are found especially in the axils of the lower sheaths, and consist equally with the primary bulb of one or more sheaths, which enclose one or more leaves.

(To be continued.)

SYPHON FOR EMPTYING, AND FOUNTAIN IN, AN AQUARIUM.

NOT having been a constant reader of *THE COTTAGE GARDENER*, I know not if the plan I adopt for syphoning my aquarium is new or not; yet I believe it is; and, if so, I think it may be of some advantage to those whose only mode of emptying their tanks, is by sucking out the air, and sometimes getting a taste of the dirty water. The plan is simple and cheap, and is as follows:—Take a piece of quarter-inch composition gas-pipe, 1d. per foot, or gutta-percha pipe, and fix in the end a small gas tap, price 10d. Draw out the air, and when enough is out, turn the tap. The syphon is then left full, and only requires the tap to be turned at any time, to draw off what is required.

If there were two taps, one in the flow, and one in the waste pipe of the fountain described at page 209, it would materially add to the value of it, as, by turning them on or off, it could be used at any time.—JOHN FAIRTHORN.

HORTICULTURAL NOTES MADE IN THE NEIGHBOURHOOD OF MONTMORENCY,

DURING A SECOND VISIT.

YOU were pleased to intimate that a few more notes on my second visit to this neighbourhood might be acceptable to your readers. As it is a labour of love with me, I have much pleasure in giving you the details of my observations.

I was there from the tenth to the 13th of July, two months after my former visit; yet, to my surprise, I did not perceive that the Vines had progressed more than with us in the vicinity of London; in fact, I have Grapes, cultivated on Hoare's system (the long-rod), in my own garden, quite as large as any I saw; and yet the growers persist in telling me that the *Madeleine* will be fit for the Paris market in a month. 'Tis true my private friends say that it is invariably picked before it is ripe. Under any circumstances, it is evident that the months of July and August are of more value than with us in bringing fruit to perfection. I saw no symptom of disease anywhere, and everything promised a most abundant crop. In all gardens, whether belonging to nurserymen or to amateurs, pinching at the bud beyond the bunch was the plan followed, but in the vineyards never; the peasants argument being, that they dare not subject themselves to the destructive effects of hail, which they have in great dread.

Your clever correspondent, Mr. Beaton, could tell them why their system was the better one, for more reasons than that. They let the shoots run to the heights of their stakes, and then top them with shears. These stakes are not of uniform length, some being five feet high, whilst others are only two.

A few words may probably be interesting on this early Grape, the *Madeleine*, or *Morillon hâtif*, as it is also called. It yields small bunches and small Grapes, but they are excellent when fully ripe; and ripe ones must be found for the feast of the Assumption, on the 15th August; because, in the Catholic processions on that day, it is customary to place a bunch in the hand of the Virgin. The fruit is of a deep violet colour, but there is a white one, bearing the same name, of inferior quality. It is an abundant bearer, and Monsieur Carlos Foret, of Margency (my host and personal friend), made his first gathering last year during the month of August, after which, to his great surprise, the Vines again flowered, and he gathered an excellent second crop in the months of October and November. Something still more remarkable, however, remains to be told. In the month of December, when he left for his Paris residence, there were still bunches of small green Grapes upon them. The alleys

of this gentleman's kitchen garden are planted on each side with Vines growing on a trellis, three feet high. There is from 550 to 600 yards of this trellis, upon which are grown two sorts of Grapes—the *Madeleine* and the *Chasselas de Fontainebleau*; the latter is considered the best white Grape grown in these parts.

This garden contains nearly seven acres, and possesses some fine old fruit trees, particularly Peach; upon one of which were counted upwards of a thousand Peaches; but, as it was feared the tree might be taxed too much to bring them to perfection, upwards of 400 were removed.

Pears had made a great start. One called *Poire d'Epargne*, was expected to be fit for market in a month.

It was described to me as a luscious Pear, but would not keep, and my informant had sold some boxes of it last season, in Covent Garden Market, at £5 per hundred Pears.

The Pear I named in my last notes, as budded on the main stems of other stocks, is called the *Belle Angerine*, but it has, unfortunately, many other names, and is described in the catalogue of Velvorde, near Brussels, and that of Jamin and Durand, near Paris, as the *Angora*, *Anderson's*, *Faux Bolivar*, *Royal d'Angleterre*, *Grosse de Bruxelles*, *Beauté de Tervuerin*, *Duchesse de Berry d'Hiver*, *Grand Monarque*, and *Uredales St. Germain*,—names enough in all conscience. It is to be regretted, that the Horticultural Societies of Europe do not come to an understanding, to re-baptize all Pears, or rather to decide on their original names. That of Paris is, I hear, seriously occupied upon it, but I do not learn that it is in conjunction with any other Society.

The *Belle Angerine* is described as a fertile tree, vigorous for pyramids in a strong, and for espaliers in a less rich soil. It is the largest of all known Pears, weighing commonly a kilo—rather over two pounds. Flesh, crisp; long in shape; of a poor quality for dessert, but of first-rate when cooked, or as a preserve. It ripens from January to June, and is handsome in colour, and very ornamental for the table.

It was to be seen in the shops, in Paris, as late as the middle of June, and the price then asked was ten francs each.

The shoots of this Pear, budded on other stocks, alluded to in my last, had progressed very much, and promised well. I found some few trees of it, on its own roots, but it does not arrive at such perfection.

I received an invitation to visit the garden of Monsieur Samson Davilliers. This gentleman is one of the administrators of the Bank of France, and takes the lead as the patron of progress in horticulture. No expense daunts him. He takes the place in France that the late Duke of Devonshire did in this country. All the different systems find a place in his gardens. I may be allowed here to correct a remark made in my last notes, that Peaches were generally pinched at the third bud. I observed it in several gardens, but it would appear that it is not found to answer; in fact, I was here shown trees that had fallen victims to the system, which was first introduced by Monsieur Dubruet. The system of Monsieur Forrest, to pinch at eight buds, has proved successful, and is adopted by both gardeners and amateurs.

Before the Revolution of 1793, fruit trees were grown *en fuseau*—that is to say, on single stems grown to any height without branches, but furnished with shoots from top to bottom. They have again come into vogue, and there were a good many in these gardens. That they bear well is not to be doubted, for trees of three and four years old, and from three to seven, and even eight feet high, were covered with fruit from top to bottom. I would advise our fruit tree growers to cultivate this style of tree, so well calculated for the small gardens in the environs of London, and our large towns. Eight of them would occupy no more room than three pyramidal trees, or two espaliers, and are remarkably pretty.

The Peach trees with single stems, is the same idea—a *fuseau* against a wall. I saw it turned to another purpose, more curious and ornamental, however, than useful, or advantageous. Half a dozen single-stemmed Pear trees were planted in a circle, in the centre of which is a trellis of wire (necessarily circular), round and round of which the six trees are trained, equi-distant from each other. The different Pears, appearing thus to be one tree, produced a very pleasing effect.

There were some very fine specimens of trees grown in the

old cup-shaped style. I do not know if that is the technical term, but I mean when all the branches from one main stem form a perfect circle, hollow in the middle. I can see no reason why such a system of growth should not succeed; but certain it is, that no trees had much fruit upon them—many none.

As a curiosity, I may name some fine specimens of Vines, grown upright to a rod of iron, about ten feet high, and cut on the spur system. By the way, I could not discover anywhere a Vine on the long-rod system. The bearing shoots were pinched, sometimes at the eye beyond the bunch, sometimes at the bunch itself. All these Vines, planted here and there amongst the lines of fruit trees in the open borders, were very handsome, covered as they were with Grapes; nay, I believe there were more Grapes than leaves; but we can only look at such things and admire. The Grapes would not ripen in this country. They might be tried in Mr. Rivers' orchard-houses.

I left these gardens, which are of immense extent, much pleased; although they more resemble a nurseryman's than a private gentleman's. There was no style, no neatness, nothing to render their general appearance attractive. They gave one the impression of being more cultivated for their produce, and for experiments, than for the pleasure they might afford by their beauty. This is, no doubt, the rule in this part of the country; and, indeed, with the exception of the public gardens, is, I understand, the rule throughout France. But the love of gardening is spreading fast, now that men, dwelling in cities and towns, are taking to themselves country houses. A few years ago, one never heard of a Parisian leaving town daily for the country. A summer country residence was a rarity; it has now become general, and with it a love of gardening has sprung up, so that we shall probably soon see neatness and elegance more studied. How many gardens have we in England presenting a pleasing—nay, beautiful appearance, without a rare flower, shrub, or tree, in them! Commend me, nevertheless, to such gardens.

Amongst the nurserymen's gardens I paid a visit to, was one belonging to Monsieur Napoleon Boisson, at Montlignon, another village of the valley. The first thing which struck me was the mass of fruit with which every tree, small or large, was laden. Cherry trees, bodies of solid red. By the way, the French do not appreciate the Cherry, which we place in the first rank—the *Bigarreau*. They call it a hard-fleshed fruit, and very indigestible; it is, nevertheless, a finer-flavoured fruit, in my opinion, than any I tasted. For some few years past, the Cherry *par excellence*—the *Montmorency*—has borne so badly in the neighbourhood, that it was seriously thought that the trees were worn out, like some of our old-fashioned Apple trees; but this year decided the question the other way,—there never was known such a crop.

They have also one they call the *English Cherry*, a very good fruit, and good bearer; and the *Royal*, a variety of *May Duke*, and which, with *Belle de Choisy*, stand as the best. The last is a bad bearer, whereas the first produces abundantly, and is often planted as an espalier.

There were plantations of Apple, Pear, Apricot, and Peach trees, *en fuseau*—those from two to four years old well covered with fruit.

A Green Gage, in various forms, grown only in this garden, called *Reine Claude hâtif*, is a very hardy tree, which ripens its fruit a full month earlier than any other kind. This tree is largely cultivated by Monsieur Boisson, for export, and he tells me, that against a wall it yields a most excellent, early, and valuable fruit. We much want something of this sort in England, where, generally, the Green Gage is sadly void of flavour.

Then there was the *Pêche des Vergers*, grown as a standard, a very prolific tree, yielding a good fruit, although not equal to the fine wall Peaches. Its hardy habit would render it, I should think, a valuable addition to us, as grown against a wall it would be a very safe producer.

I had a long conversation with Monsieur Boisson, an intelligent man in his way. Amongst other things he told me that he should have from twenty-five to thirty thousand Pears this season, of good and valuable sorts, which he intends to ship to this market. Now, suppose they net him 2d. each only, they will produce from £200 to £220, but I think that valuation too low, as the class of Pears grown, particularly

the early ones, bring long prices. This sum even, is not bad, derived from trees grown for sale.

This village of Montlignon is quite a curiosity in its way; almost every other house is a nurseryman's, and bears its signboard, "Pepineriste, Arbres Fruitières," and all men well-to-do in the world. Some are great in one thing, some in another. Their principal markets are the United States and Belgium. To the first place Monsieur Boisson shipped, last autumn, 60,000 one-year-old Pear trees.

In the open country, I saw two rows of Apple trees grown to a large extent; and if, as I believe, I was correctly informed, they are peculiar to this neighbourhood; at all events, they do not figure in the catalogues of the nurserymen of other parts. The one is called the *Ravaillar*, and the origin of the name, as told by one of the learned blue-aprons of the village (they do not wear blue aprons there) was amusing. The name came, he said, from Ravaillac, the assassin of Henry IV., and was called after him in consequence of the blood-red colour of its fruit! The worthy was not to be daunted by the remark, that the assassin's name was Ravaillac. His answer was prompt—Ravaillac was not his real name, but Ravaillar. Your readers will judge of the value of the information. We allowed him to please himself with the idea that he had convinced us. There is, however, an Apple tree, which figures in the catalogue of the Royal Nursery of Velverde, named *Ravaillac*; but it is described as a dwarf tree, antagonistic to the one in question, which is very large and very handsome when in blossom, at which state it does not arrive until the end of May, and sometimes not until June. It is, consequently, never touched by frost, and rarely blighted. It bears abundantly. Its fruit is tolerably good for dessert; most excellent for pies, puddings, and preserves; and a capital keeping Apple, specimens being common in June of the following year. The deep red colour of its fruit, with which its branches are almost always laden, presents a singular appearance.

The other is called *Jean Huré*, named after the rearer, Jean Huré, of Franconville, a village two leagues from Montmorency. It possesses the same advantages as the *Ravaillar*; but, as a tree, is still more rustic, its branches trailing on the ground laden with fruit, which, however, is smaller, not so red in colour, and not quite equal in quality. The country people make cider of it when they cannot sell it for a fair price, which is rare; for, as they say, "the Parisian eats up everything."

Surely these trees could be acclimatised here, where, from their late blossoming, they would be valuable as a kitchen fruit.

The wine made from the Grapes here cannot be so poor as I thought, since I find that the vintage of 1857 is worth at the present moment sixty francs for 220 litres,—say 48s. for forty-nine gallons,—whereas that of the same year's growth, in the neighbourhood of Nancy, is selling for 26s. 6d. for the same quantity. Labourers wages vary according to their ability and the season, ranging from 2s. to 3s. per day.

The value of land has much increased in all this neighbourhood. I was offered a piece of freehold containing two arpents, say an acre and a half, for 20,000 francs (£800). The price was not considered exorbitant, and it is probable that its value will be much greater in a very few years; for the whole valley and district of Montmorency may be considered as, *par excellence*, the best spot for country residences, as it is decidedly the most beautiful one in the environs of Paris.

This price is by no means a maximum one, land of first-rate quality, and well placed for building, having been sold as high as 24,000 francs the acre—very nearly £1000!

The forest belongs to four or five proprietors, and contains about 5000 acres. It runs from eight to nine miles in length, by two to two and a half in breadth. It offers walks and rides of the most pleasing and varied kind, but it is deficient in roads, and the few that exist are almost impracticable. From the eminences and the cultivated grounds, where the forest has been cleared, called "Champcaux" (a corruption, probably, of Champs hauts), very fine panoramic views of Paris may be discovered.

There is a drawback as regards Enghein and Montmorency. These places attract so large a portion of the citizens of Paris, that families must keep to the quietude of their own gardens on the Sundays, as the roads, footpaths, and bridleways are

peopled with visitors,—equestrians on every sort of animal of the horse and donkey genus,—lame and spavined, halt and blind, all find amateurs. The donkeys, by the way, are first-rate, fine, large animals, equal to mules in size.

I spent the few days I had allowed myself most agreeably, and on my return home by the *Chemin du Nord*, which runs across the valley, as I threw a last look on the spot thus favoured by Nature, I thought that I could live most happy amidst its pleasant scenery, and amongst its agreeable and cheerful inhabitants, if it were only under a Queen Victoria instead of an Emperor Napoleon. A reflection which will be pardoned by your readers, I feel quite sure.—H. S. W., *Tollington Park*.

THE HAY FEVER.

THE COTTAGE GARDENER lately inquired for a remedy for hay fever, and, though I cannot exactly give one, possibly the information that a tonic in a friend's case led to nearly complete success, may be useful for others. Tincture of bark was tried, and the yearly attack was much slighter than usual; it occasioned very little inconvenience. A dessert-spoonful at eleven every morning was the quantity used. Probably quinine would answer still better. It is many years since the trial was made, and the latter preparation of bark was not so well known. The idea of trying it occurred from seeing in a well-known medical work, that bark, given for some more serious complaint, had entirely removed a cold in the head of many weeks duration. The very close resemblance of my friend's constant attack at the hay season to the severe cold, we now term influenza, seemed to justify the trial of the bark; and it certainly relieved him surprisingly. I have thought it probable that, had it been used earlier, as a preventive, it might have been the means of warding off the attack altogether.—S.

QUERIES AND ANSWERS.

DRYING PLANTS FOR THE HERBARIUM.

"I shall feel much obliged by a statement of the best method of drying the leaves and flowers of stove and other plants, Ferns, &c., so as to preserve the colours for specimens.—E. D. S.

[The following are the directions given by Dr. Withering, and Dr. Lettsom:—"The plants should be gathered in a dry day, after the sun hath exhaled the dew; taking particular care to collect them in that state wherein the generic and specific characters are most conspicuous; the specimens should be suffered to lie on a table until they become limber, and then they should be laid upon a pasteboard, as much as possible in their natural form, but, at the same time, with a particular view to their generic and specific characters: for this purpose, it will be advisable to separate one of the flowers, and to display the generic character: if the specific character depends upon the flower, or upon the root, a particular display of that will be likewise necessary. When the plant is thus disposed upon the pasteboard, cover it with eight or ten layers of spongy paper, and put it into the press. The press may be prepared by the following directions:—"Take two planks of a wood not liable to warp, two inches thick, eighteen inches long, and twelve inches broad. Get four male and four female screws, such as are commonly used for securing sash windows. Let the four female screws be let into the four corners of one of the planks, and corresponding holes made through the four corners of the other plank, for the male screws to pass through, so as to allow the two planks to be screwed tightly together. It will not be amiss to face the bearing of the male screws upon the wood, with iron plates; and if the iron plates went across from corner to corner of the wood, it would be a good security against the warping." Exert only a small degree of pressure for the first two or three days; then examine it, unfold any unnatural plaits, rectify any mistakes, and, after putting fresh paper over it, screw the press harder. In about three days more, separate the plant from the pasteboard, if it is sufficiently firm to allow of a change of place; put it upon a fresh pasteboard, and, covering it with fresh blossom-paper, let it remain in the press a few days

longer. The press should stand in the sunshine, or within the influence of a fire.

"When it is perfectly dry, the usual method is to fasten it down with paste or gum-water. A small quantity of finely-powdered arsenic, or corrosive sublimate, is usually mixed with the paste or gum-water, to prevent the devastations of insects; but the seeds of *Stavesacre*, finely powdered, will answer the same purpose, without being liable to corrode, or to change the colour of the more delicate plants. Fasten it on the right-hand inner page of a sheet of large strong writing-paper. It requires some dexterity to glue the plant neatly down, so that none of the gum, or paste, may appear to defile the paper. When it is quite dry, write upon the left-hand inner page of the paper, the name of the plant, the specific character, the place where, and the time when, it was found; and any other remarks that may be thought proper. Upon the back of the same page, near the fold of the paper, write the name of the plant, and it will then be complete for the cabinet.

"Some people put the dried plants into sheets of writing-paper, without fastening them down at all; and others only fasten them by means of small slips of paper, pasted across the stem or branches.

"Another more expeditious method is, to take the plants out of the press, after the first or second day; let them remain upon the pasteboard; cover them with five or six leaves of blotting-paper, and iron them with a hot smoothing-iron, until they are perfectly dry: if the iron is too hot it will change the colours; but some people, taught by long practice, will succeed very happily. This is quite the best method to treat the orchis, and other flimsy mucilaginous plants.

"Another method is, to take the plants when fresh gathered, and, instead of putting them into the press, immediately to fasten them down to the paper, with strong gum-water; then dip a camel-hair pencil into spirit-varnish. The spirit-varnish may be made of a quart of highly-rectified spirit of wine, five ounces of gum sandarach, two ounces of mastich in drops, one ounce of pale gum elemi, and one ounce of oil of spike lavender: these are to stand in a warm place, and be shook frequently, to expedite the solution of the gum. Varnish the whole surface of the plant two or three times over. This method succeeds very well with plants that are readily laid flat, and it preserves their colours better than any other.

"However beautiful a collection of dried plants may be in the form of a *hortus-siccus*, yet, where duplicates can be got, it would be acceptable to receive plants both in flower and in seed, dried in a careless manner, without nicety in expanding their foliage: by this means some of the flowers have been preserved more entire; and afforded the botanist the most accurate characters of the plant, which by exposure to the vapour of hot water, or being soaked in lukewarm water itself, has expanded, and exhibited the parts of fructification in the most perfect state.

"The seeds of a plant collected when they are ripe, will, in a *hortus-siccus*, long retain their vegetative powers, and many of our valuable plants have thus been casually introduced. It is well-known, that the first Tea-tree possessed by this country was raised by the late John Ellis, Esq., from a seed picked out of a cannister of tea."]

FOUNTAIN IN AN AQUARIUM.

"HAVING seen in your valuable paper, a week or two back, a design for a small fountain, to play above the supply, I was induced to try one in a small six-inch glass and stand. The piping was some cane, about quarter-inch hole, with small gas-burner on the top, the waste-pipe one foot eight inches, and the supply-pipe ten inches long. This played well up to the top of the glass. I thought I would try it on a larger scale. I got a thirteen-inch propagating glass and Elm stand, quarter-inch gutta-percha piping, gas-burner with sixteenth-of-an-inch hole, fixed the glass on with putty, and screwed the pipes on. During the night the board warped, and broke the glass; so I got a fresh glass, and a slate bottom with half-inch gutter, cut in the size and shape of the glass; I also got two connecting pieces, had them leaded in the slate, and turned a flange on each of the pipes, so that I could screw them on, with an India-rubber band between to make all airtight. A piece of brass gas-burner stood up in the centre, about three inches long, with gas jet screwed in with

sixteenth-of-an-inch hole. The glass was well secured on with putty, the supply from a bucket, the supply-pipe one foot six inches long, and the waste-pipe two feet nine inches long. While drawing the air from the waste-pipe, the water would rise a little—say about an inch from the top of the jet; but the moment I ceased to draw the waste ceased to rise. I took it to pieces several times, and everything appeared well airtight. I got well tired, and left it for the daylight. Behold, in the morning the glass was cracked on each side, in a straight direction, nearly up to the top. Will you kindly explain to me the cause, as soon as convenient?—EXPERIMENTER.

[The receiver formed by your thirteen-inch propagating glass was too large to be exhausted by suction from any human lungs. The receiver cracking must have been caused by its being fixed very tightly, and the heat to which it was exposed being much increased or diminished at night,—the tight fixing not permitting the consequent expansion or contraction.]

THE LILIES OF THE FIELD.

If our readers will refer to page 237, of our eighteenth volume, they will find some notes on the probable "Lilies of the Field" referred to by our Saviour, with a sketch of Abdallah Asmar, a Maronite physician, and a suggestion that, through him, some satisfactory information might be obtained relative to this plant. That suggestion seems likely to be verified, as will be seen in the following extract from a letter just received from Abdallah Asmar, which we publish in his peculiarly constructed English, and for which extract we are much obliged:—

"In one of your letters, you mentioned that, in some periodical writing on botany, there was a mention made of the Lilies I sent you. That was very flattering, and will encourage me to seek some Syrian flowers for English examination. You wished me to inquire whether the said sent Lilies are the same which are grown in Galilee, in the Holy Land, as the fact of their growing wild in Lebanon would not prove them to be the Lily of the Field, spoken of by our Saviour. Anxious to fulfil your wishes, I begged some of the merchants, who take Syrian articles, to exchange them for the Holy Land produce, and also some of my friends, who go on pilgrimage to Jerusalem, that they will oblige me by getting some onions of Lilies from the valleys of mountains of the vicinity of Galilee and Jerusalem. They promised to do their utmost, and will save themselves no pain on that account. Imagine how glad I was when they came back from a long-wished-for journey, bringing with them from the neighbourhood of Galilee and Jerusalem few of Lily bulbs. They had great trouble and much time to get to those rebellious parts of the country where these hermit Lilies prefer to choose their residence. Of course, they were obliged to hire some of the natives to go with them to show them the valleys where do they grow. Having got these holy bulbs late in the season, I was afraid of sending them lest they should leaf on board. I therefore took care to bury them well till the summer coming, when they will be dry again, and fit for travelling. This is the little history of the holy Lilies."

When the bulbs referred to have flowered in England, we shall see what the present race of Galileans believe the Lily of the Field to be.

BEEHIVES AND THEIR COVERS.

I HAVE heard, read, and seen, some little of beehives, and am about to come to the conclusion that the good old straw skips, with proper facilities for additional room above, and a back window, are, perhaps, after all, the cheapest and best. What is your opinion?

By the way of improvement, I coated the exterior of two of my straw hives with Roman cement this season, before placing bees in them. It unquestionably has, as bee-writers have stated, the advantage of durability, and excludes mice and prevents moths from working into the straw, and must, I should think, be warmer in winter. But I do not like to see dampness almost invariably on the back window, and am afraid, particularly in the heat of summer, the cement may interfere with the due ventilation of the hives, and, con-

sequently, tell on the health of the inmates, so as more than to do away with the advantages named. Do you, or any of your readers, heartily approve of cement,—not theoretically, but from actual experience?

As to covers for beehives, the straw sheaf, no doubt, possesses the valuable advantage of coolness in summer and warmth in winter, but then it has the disadvantage of being a receptacle for moths and mice. I found more than one of the latter snugly ensconced in my sheaves this last spring, although the hives are placed on single posts. It is, besides, a clumsy affair to handle and replace neatly, causes an abominable litter among flowers, and requires to be frequently renewed to have anything of a clean look. Could you, or any of your readers, inform me of a substitute equally efficacious for the purpose? The discoverer of such would confer a lasting benefit on bee-keepers.

I have thought of a thick wooden cover, well painted, and, what would be better, perhaps, of wood not so thick, but *double*; the space—about an inch or so—between the boards to be filled with sawdust, which would cause it to be impervious to the sun's heat. It could be attached firmly to the board, and divided into two parts; the back one, hinged as a door for inspection, or removal of the hives, brought in neatly to a point at the top, on which could be placed a little turned ornament, finished as the taste or means of the proprietor would allow. A nice thing of this sort might be placed with effect in some corner of the flower garden. I mean to try an octagon cover of this fashion for a set of Stewarton boxes, but would it be too close?—A SCOTCH BEE-KEEPER.

[If the plan adopted by "Tyro," detailed at pp. 208 and 238, is found to answer generally, then the old straw beehive may be preferred to any. We never use straw covers. Over our Marriott's and Neighbour's hive, we have little wooden houses, very much after the form of those in boxes of Dutch toys. Over flat-topped hives, such as the Stewarton and Tegetmeier's, we turn a brown earthenware milk-pan, large enough to project two or three inches all round. These pans are painted green, and the hives stone-colour. We believe bees rarely suffer from cold.—ED.]

PLANTS IN THE KALAHARI DESERT— CENTRAL AFRICA.

THE quantity of grass which grows in this remarkable region is astonishing, even to those who are familiar with India. It usually rises in tufts with bare spaces between, or the intervals are occupied by creeping plants, which, having their roots buried far beneath the soil, feel little the effects of the scorching sun. The number of these which have tuberous roots is very great; and their structure is intended to supply nutriment and moisture when, during the long droughts, they can be obtained nowhere else. Here we have an example of a plant, not generally tuber-bearing, becoming so under circumstances where that appendage is necessary to act as a reservoir for preserving its life; and the same thing occurs in Angola to a species of Grape-bearing Vine, which is so furnished for the same purpose. The plant to which I at present refer is one of the Cucurbitaceæ, which bears a small, scarlet-coloured, eatable Cucumber. Another plant, named *Leroshúa*, is a blessing to the inhabitants of the Desert. We see a small plant with linear leaves, and a stalk not thicker than a crow's quill; on digging down a foot or eighteen inches beneath, we come to a tuber, often as large as the head of a young child; when the rind is removed, we find it to be a mass of cellular tissue, filled with fluid much like that in a young Turnip. Owing to the depth beneath the soil at which it is found, it is generally deliciously cool and refreshing. Another kind, named *Mokuri*, is seen in other parts of the country, where long-continued heat parches the soil. This plant is a herbaceous creeper, and deposits underground a number of tubers, some as large as a man's head, at spots in a circle a yard or more, horizontally, from the stem. The natives strike the ground on the circumference of the circle with stones, till, by hearing a difference of sound, they know the water-bearing tuber to be underneath. They then dig down a foot or so, and find it.

But the most surprising plant of the Desert is the "Kengwe,

or Kēme" (*Cucumis caffer*), the Water Melon. In years when more than the usual quantity of rain falls, vast tracts of the country are literally covered with these Melons; this was the case annually when the fall of rain was greater than it is now, and the Bakwains sent trading parties every year to the lake. It happens commonly once every ten or eleven years, and for the last three times its occurrence has coincided with an extraordinarily wet season. Then animals of every sort and name, including man, rejoice in the rich supply. The elephant, true lord of the forest, revels in this fruit, and so do the different species of rhinoceros, although naturally so diverse in their choice of pasture. The various kinds of antelopes feed on them with equal avidity, and lions, hyænas, jackals, and mice, all seem to know and appreciate the common blessing. These Melons are not, however, all of them eatable; some are sweet, and others so bitter, that the whole are named by the Boers the "Bitter Water Melon." The natives select them by striking one Melon after another with a hatchet, and applying the tongue to the gashes. They thus readily distinguish between the bitter and sweet. The bitter are deleterious, but the sweet are quite wholesome. This peculiarity of one species of plants bearing both sweet and bitter fruits occurs also in a red eatable cucumber often met with in the country. It is about four inches long, and about an inch and a half in diameter. It is of a bright scarlet colour when ripe. Many are bitter, others quite sweet. Even Melons in a garden may be made bitter by a few bitter Kengwe in the vicinity. The bees convey the pollen from one to the other.

When first taken possession of, these parts are said to have been covered with a coating of grass, but that has disappeared with the antelopes which fed upon it, and a crop of *Mesembryanthemums* and *Crassulas* occupies its place. It is curious to observe how, in nature, organizations the most dissimilar are mutually dependent on each other for their perpetuation. Here the original grasses were dependent for dissemination on the grass-feeding animals, which scattered the seeds. When, by the death of the antelopes, no fresh sowing was made, the African droughts proved too much for this form of vegetation. But even this contingency was foreseen by the Omniscient One; for, as we may now observe in the Kalahari Desert, another family of plants, the *Mesembryanthemums*, stood ready to neutralize the aridity which must otherwise have followed. This family of plants possesses seed-vessels which remain firmly shut on their contents while the soil is hot and dry, and thus preserve the vegetative power intact during the highest heat of the torrid sun; but when rain falls, the seed-vessel opens and sheds its contents just when there is the greatest probability of their vegetating. In other plants heat and drought cause the seed-vessels to burst, and shed their charge.

One of this family is edible (*Mesembryanthemum edule*); another possesses a tuberous root, which may be eaten raw; and all are furnished with thick fleshy leaves, having pores capable of imbibing and retaining moisture from a very dry atmosphere and soil, so that, if a leaf is broken during a period of the greatest drought it shows abundant circulating sap. The plants of this family are found much further north, but the great abundance of the grasses prevents them from making any show. There, however, they stand, ready to fill up any gap which may occur in the present prevailing vegetation; and should the grasses disappear, animal life would not necessarily be destroyed, because a reserve supply, equivalent to a fresh act of creative power, has been provided.

One of this family, *M. turbiniforme*, is so coloured as to blend in well with the hue of the soil and stones around it; and a *gryllus* of the same colour feeds on it. In the case of the insect, the peculiar colour is given as compensation for the deficiency of the powers of motion to enable it to elude the notice of birds. The continuation of the species is here the end in view. In the case of the plant the same device is adopted for a sort of double end, viz., perpetuation of the plant by hiding it from animals, with the view that ultimately its extensive appearance will sustain that race.

As this new vegetation is better adapted for sheep and goats in a dry country than grass, the Boers supplant the latter by imitating the process by which granivorous antelopes have so abundantly disseminated the seed of grasses. A few waggon-loads of *Mesembryanthemum* plants, in seed, are brought to a farm covered with a scanty crop of coarse

grass, and placed on a spot to which the sheep have access in the evenings. As they eat a little every night, the seeds are dropped over the grazing grounds, in this simple way, with a regularity which could not be matched except at the cost of an immense amount of labour. The place becomes in the course of a few years a sheep farm, as these animals thrive on such herbage. As already mentioned, some plants of this family are furnished with an additional contrivance for withstanding droughts, viz., oblong tubers, which, buried deep enough beneath the soil for complete protection from the scorching sun, serve as reservoirs of sap and nutriment during those rainless periods which recur perpetually in even the most favoured spots of Africa. I have adverted to this peculiarity as often seen in the vegetation of the Desert; and, though rather out of place, it may be well,—while noticing a clever imitation of one process in nature by the Cape farmers,—to suggest another for their consideration. The country beyond south lat. 18°, abounds in three varieties of Grape-bearing Vines; and one of these is furnished with oblong tubers every three or four inches along the horizontal root. They resemble closely those of the Asparagus. This increase of power to withstand the effects of climate, might prove of value in the more arid parts of the Cape colony, Grapes being well known to be an excellent restorative in the debility produced by heat; by engrafting, or by some of those curious manipulations which we read of in books on gardening, a variety might be secured better adapted to the country than the foreign Vines at present cultivated. The Americans find that some of their native Vines yield wines superior to those made from the very best imported Vines from France and Portugal. What a boon a Vine of the sort contemplated would have been to a Rhenish missionary I met at a part in the west of the colony called Ebenezer, whose children had never seen flowers, though old enough to talk about them!—(*Livingstone's Missionary Travels.*)

SUPERIOR BALSAMS.—We have before us a small basket of Balsam flowers, the finest, without any exception, that we ever saw. When we opened the basket we literally thought that they were specimens of very double new Roses. One bloom is dark purplish crimson, another creamy white, a third maiden's blush, and a fourth mottled crimson and white. They are from German seed, imported by Messrs. Carter and Co., seedsmen, High Holborn; and have been raised by Mr. Parmenter, gardener to — Taylor, Esq., of Croft Lodge, Highgate.

TO CORRESPONDENTS.

DISPUTED RULE (*James Marsh*).—The Heywood Horticultural Society has this rule. "18. This Exhibition is open to three classes, viz.:—1st. Gentlemen employing gardeners. 2nd. Cottagers with a greenhouse. 3rd. Cottagers window plants, not grown in a frame or greenhouse." Now, it happens that J. M. has a small greenhouse, but he also grows plants in his dwelling-house window, and it is disputed whether he has to pay entrance money for his greenhouse plants, and entrance money for his window plants, as he wishes to exhibit both. Our opinion is asked, and we are decidedly of opinion that he ought not to be allowed to exhibit window plants at all. The object of having a class for "Cottagers with a Greenhouse," is to keep them from competing with cottagers who have only a cottage window for their plants. J. M., we have no reason to doubt, would compete fairly with plants grown solely in the window of his cottage; but Sam Sly might slip in among his window plants other plants which had been nurtured in his greenhouse. The rule will be open to great unfairness if any exception is made.

PRICES OF HONEY AND WAX (*Apiarian*).—These vary in different districts. We shall be obliged by information on the subject.

PHLOXES (*A Lady Gardener*).—They were described as being at Messrs. Low and Co.'s, florists, Clapton, Middlesex. Write to them for the information you require.

LATIN NAMES (*H. C.*).—The names of plants in the Calendar are, some of those blooming in the greenhouse during the month. Martyn's "Language of Botany" will give you explanations of botanical terms.

SEEDLINGS OF ANTIRRHINUM AND TROPEOLUM MAJUS (*E. X. Y. Z.*).—The Antirrhinums have no distinguishing merit. The Tropæolums are more varied in colour than we ever saw before. One pale yellow, with a crimson-pencilled blotch on each lobe of the corolla, is very peculiar and good.

RHUBARB SMALL-STALKED (*X. Y. Z.*).—Trench some ground two feet deep, mixing some rich manure throughout the soil. Take up your Rhubarb in October, when the leaves have turned yellow, divide the roots, leaving one crown bud, or at most, two, such buds, to each division. Plant the divided roots with the buds an inch below the surface, five feet apart. In the spring, when the buds begin to move, give plenty of liquid manure. They will not give fine leaf-stalks next

year, but if you keep them mulched and thus well manured, they will the year following. Rhubarb stools require to be thus divided every third year. If half the bed is done annually, there is no interruption of the supply.

COW SHEDDING HER MILK.—Can any of your readers tell me if there is any remedy, or what course had best be adopted, for a cow who sheds her milk in the field? or is the butcher the only resource?—A FARMER. [We shall be obliged by an answer.]

NAMES OF PLANTS (*An Admirer of "The Cottage Gardener"*).—Your plants are very small and imperfect bits, as compared with the plants in reality. Therefore, we cannot undertake to be certain as to the species of them all. No. 1, is an *Echeveria*, and probably *acutifolia*; 2, appears to be taken from the *Cactus grandiflorus*, the trailing night-flowering Cereus, or rather *Cereus grandiflorus*; 3, is a *Cactus*, but which species we cannot be certain; 4, is one of the dwarf *Mesembryanthemums*, but too small a bit to be certain what species.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 7th, 9th, 10th, and 11th. CRYSTAL PALACE (SUMMER SHOW). Entries close July 10th. Sec., W. Houghton.
AUGUST 17th. ORMSKIRK. Secs., Wm. Shawe, and James Spenceer, Ormskirk.
AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth, Shipley.
AUGUST 28th. HALIFAX AND CALDER VALE. Sec., Mr. Wm. Irvine Holmfield, Halifax. Entries close August 14.
OCTOBER 7th and 8th. WORCESTERSHIRE. Sec., Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.
NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.
DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, Woolshops, Halifax.
JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.
N.B.—Secretaries will oblige us by sending early copies of their lists.

CRYSTAL PALACE POULTRY SHOW.

WE are happy to be able to give our readers an outline of the treat they may expect at this place at the ensuing Show. Anxious, if possible, to improve the Exhibition, and to give the poultry world and amateurs all the comfort they deserve, or could look for, the Directors have changed the *locale*.

The north wing, hitherto the Picture Gallery, will be this time devoted to poultry, and the large tower adjoining will be handsomely fitted up as a refreshment tent. Many amateurs, especially ladies, had complained that, when the Show was held in the other wing, the constant passage of visitors interfered with a comfortable view of the birds. The new arrangement obviates this. The Show can be entered either from the Palace or the grounds. The eye then can be constantly refreshed, either by entering the Palace, or by walking in the grounds; and when it is recollected that all is arranged by the Directors without increasing the admission money, or taking to themselves an advantage in any way, we think they have established a good claim on the public, and we hope they will meet the support they so richly deserve.

We are in a position to promise them a sight of the best birds in England. Add to it a collection of Pigeons unrivalled,—and we believe the Runts entered for the Silver Cup are very giants.

The Crystal Palace has, also, become the trysting place of Rabbit breeders, and the entry this year promises to eclipse all previous exhibitions.

MERTHYR TYDVIL POULTRY SHOW.

JULY 28th and 29th.

WHENCE comes it, that at some places, where success would seem almost impossible, Poultry Shows flourish, while at others, where every element of success would seem to be at hand, they languish and die? We asked ourselves this question, and time to think it over did not fail us as we rode through the lovely Welsh valleys. At every station we put down tribes of visitors who had been to the Poultry Show. All had heartily enjoyed themselves, and, from those few who spoke an intelligible language, we found that there was a desire that Shows should be multiplied in the principality. There would seem to be a heartiness and a freedom from affectation about the inhabitants of many of these places of recent growth, which we

do not find among the dwellers in ancient towns and cities. In the one, all are engaged in forwarding the general prosperity, and in strengthening the infant settlement; in the other, the limits of each man's society are defined. Too often the dweller in an old provincial town assumes a sort of "See Naples and die" feeling; and, having known and enjoyed all that Pedlington can show him, he is *blasé* so far as the rest of the world is concerned. Such is not the case at Merthyr. Business is suspended in the town after one o'clock, excursion trains run on every railway, and all are interested in the success of the Show.

It was last year held in a meadow, and, favoured by magnificent weather, was highly successful; but dreading the proverbial fickleness of our climate, it was now moved into the Market House, a very lofty and spacious building. The Exhibition is not confined to poultry, but also extends to fruit, flowers, and vegetables. Your reporter knows little of the latter, but his knowledge is great enough to enable him to say it was an excellent show, and that the progress, since last year, was marked. We were much gratified with the improvements in the Cottager's Classes, and especially with the collections of eight vegetables. There was a large display of Melons, Pines, &c. The latter seem to increase very much in size, but there were some, named *The Enville*, that were deficient of the stately Pine top, and have a sort of Piney cock's-comb growing all across the head. We prefer the look of the old Pine-top. Last year we wandered among ladies fashions; now we catch ourselves criticising fruit. We shall be liable to prosecution—

"Dash the wig o'me—

If with poultry and fruit you persist to go,
I'll have you indicted for bigamy."

In sober seriousness, then, let us tell our readers,—if they have had patience to get thus far,—that here, as elsewhere, there was a great and marked improvement in *Dorkings*, *Spanish*, and *Game*. That the *Poland* entries were few in number, and that chickens are evidently late and scarce everywhere this year. Our Merthyr Tydvil friends are a learning people, and seeing that last year we pointed out that where Game fowls were shown with legs of divers colours in the same pen, that disqualification was the result, and that such was, consequently, avoided this year, we now tell them, the same result always follows a mixture of combs. To this we attribute, that the Judge passed over a class of various *Bantams*, otherwise meritorious. The *Golden Hamburgs*, both *Pencilled* and *Spangled*, were better than the *Silver*. The *Gold* and *Silver Sebrights* were good; but the *Game* do not yet seem to have penetrated into Wales, at least there were none shown. The *Turkeys* and *Geese* were excellent; and of the *Ducks*, the *Rouens* were better than the *Aylesburys*. Here, again, a last year's lesson was remembered,—the bills were of the right colour. We do not hold with the prizes offered for the four best young Ducks of any breed. The only result of it is, that four worthless animals get a prize. Our notion is, that everything shown at an exhibition should be pure.

We congratulate the very efficient Committee on the success and comfort of their Exhibition. We advise some alteration in the prize sheet, as, being a local Show, the greatest premiums should be offered for the breeds that are kept in the neighbourhood; and we cannot wish them better than that they may have many yearly Meetings as happy and successful as that we now record.

The Judge was Mr. Baily, Mount Street, Grosvenor Square.

OLD BIRDS.

COCHIN-CHINA (Black).—First, R. T. Crawshay, Cyfarthfa.

COCHIN-CHINA (Cinnamon and Buff).—First, R. T. Crawshay, Cyfarthfa.

COCHIN-CHINA (White).—Second, R. T. Crawshay, Cyfarthfa.

COCHIN-CHINA (Brown Partridge-feathered).—First, W. Kedart, Pendarran.

BRAHMA POOTRA.—Second, E. W. Scale, Troedyrhiw.

DORKINGS (Coloured).—First, R. Forman, Pendarran. Second, D. Williams, Greyhound Hotel. Highly Commended, E. W. Scale, Troedyrhiw. Commended, R. T. Crawshay, Cyfarthfa.

DORKINGS (White).—First, R. Forman, Pendarran.

MALAY.—First, R. T. Crawshay, Cyfarthfa.

GAME.—First and Second, R. T. Crawshay, Cyfarthfa. Highly Commended, W. Crawshay, Treforest.

HAMBURGH (Gold-pencilled).—First, R. T. Crawshay, Cyfarthfa.

HAMBURGH (Silver-pencilled).—First, J. Llewellyn, St. Fagans.

HAMBURGH (Silver-spangled).—Second, J. Carr, Havod, Swansea.

HAMBURGH (Golden-spangled).—First, L. Williams, Merthyr. Second, R. T. Crawshay, Cyfarthfa.

HAMBURGH (Black).—First, R. T. Crawshay, Cyfarthfa.

POLANDS (White-crested Black).—First, R. T. Crawshay, Cyfarthfa.

POLANDS (Golden).—Second, R. T. Crawshay, Cyfarthfa.

POLANDS (Silver).—Second, J. T. Williams, Merthyr.

POLANDS (Buff).—Second, J. T. Williams, Merthyr.

SPANISH.—First, R. Forman, Pendarran. Second, E. Payne, Wharf, Cardiff. Commended, R. T. Crawshay, Cyfarthfa.

BANTAMS (Gold-laced).—First and Second, R. T. Crawshay, Cyfarthfa.

BANTAMS (Silver-laced).—First, R. T. Crawshay, Cyfarthfa.

BANTAMS (Black).—First, J. Jones, High Street, Merthyr. Second, G. Warren, Merthyr.

BANTAMS (White).—First, R. Williams, Merthyr. Second, C. Smith, Merthyr.

SILKY FOWLS.—Commended, J. Calvert, Pontypridd.

GESE.—First and Second, R. T. Crawshay, Cyfarthfa.

GOSLINGS.—First, R. T. Crawshay, Cyfarthfa. Second, Mrs. Lewellyn, Court Colman, Bridgend. Highly Commended, W. Cuff, St. Fagans.

DUCKS (Aylesbury).—First, E. Payne, Wharf, Cardiff. Second, W. Jones, Cefn. Commended, R. T. Crawshay, Cyfarthfa.

DUCKS (Rouen).—First, R. T. Crawshay, Cyfarthfa. Second, W. Cuff, St. Fagans.

DUCKS (Black).—Second, R. T. Crawshay, Cyfarthfa.

DUCKS (Muscovy).—First, R. T. Crawshay, Cyfarthfa.

YOUNG DUCKS (of any breed).—First, D. T. Jones, Merthyr. Second, J. Bryant, Merthyr.

TURKEYS.—First, R. T. Crawshay, Cyfarthfa.

GUINEA FOWLS.—First, R. T. Crawshay, Cyfarthfa. Second — Heyhurst, Pendarran.

FOWLS OF ANY OTHER BREED.—Prize, W. Lloyd, Tydfil's Well.

YOUNG BIRDS.

COCHIN-CHINA (Black).—First and Second, R. T. Crawshay, Cyfarthfa.

COCHIN-CHINA (Cinnamon and Buff).—R. T. Crawshay, Cyfarthfa.

COCHIN-CHINA (White).—First, R. T. Crawshay, Cyfarthfa.

COCHIN-CHINA (Brown Partridge-feathered).—First and Second, R. T. Crawshay, Cyfarthfa.

BRAHMA POOTRA.—First, R. T. Crawshay, Cyfarthfa.

DORKINGS (Coloured).—First, D. Williams, Greyhound Hotel. Second, E. W. Scale, Troedyrhiw. Commended, R. Forman, Pendarran.

DORKINGS (White).—First, R. Forman, Pendarran.

GAME.—First and Second, R. T. Crawshay, Cyfarthfa.

HAMBURGH (Silver-pencilled).—Second, G. Warren, Merthyr.

HAMBURGH (Silver-spangled).—First and Second, C. Smith, draper, Merthyr.

HAMBURGH (Golden-spangled).—Second, J. Llewellyn, St. Fagans.

SPANISH.—First, E. Payne, Wharf, Cardiff. Second, R. T. Crawshay, Cyfarthfa.

BANTAMS (White).—First, C. Smith, draper, Merthyr.

BANTAMS (any other variety).—Prize, — Hansard, jun., Ynysfach, Merthyr.

WORKMEN'S PRIZES.

FOWLS OF ANY BREED.—First, W. Lloyd, Tydfil's Well, Merthyr. Second, W. John, sawyer, Merthyr.

DUCKS OF 1858.—First, W. John, sawyer, Merthyr.

CHICKENS OF 1858.—First, J. Gibbon, engineer, Troedyrhiw. Second, W. John, sawyer, Merthyr.

GOSLINGS.—Prize, W. Rees, lock-keeper, Merthyr.

GESE.—Prize, W. Rees, lock-keeper, Merthyr.

RABBITS (Long-eared).—Prize, W. Crawshay, Treforest.

PIGEONS.

Carriers.—First and Second, G. Warren, Merthyr. Tumblers.—First, G. Warren, Merthyr. Jacobins.—Second, G. Warren, Merthyr. Trumpeters.—First and Second, G. Warren, Merthyr. Beards.—G. Warren, Merthyr. Pouters or Croppers.—Second, G. Warren, Merthyr. Any other sort.—Second, G. Warren, Merthyr (Fantails).

ROYAL AGRICULTURAL SOCIETY'S POULTRY EXHIBITION.

ALTHOUGH it is probable a report of this Meeting may have already been prepared for the numerous readers of THE COTTAGE GARDENER, perchance a few passing remarks, referring to the poultry department, from a visitor at Chester, may not be considered intrusive. There is no doubt on my mind, that, considered as a whole, the Exhibition just closed was decidedly the best collection of poultry that has yet been exhibited at any Meeting of the Royal Society; such, I hear, was the opinion of the Judges, nor did I hear of a single dissentient among the numerous visitors. The manifest improvement in those varieties of fowls chiefly valued for their domestic utility was the most apparent of any. The chickens of the *Grey Dorkings* have never been excelled, if the early season of the year is duly considered; and the adult fowls of this class, although somewhat out of feather from moulting, fully maintained their position as public favourites. Captain

Hornby, of Knowsley Cottage, deservedly triumphed by taking a first, and also second prize, in both these classes.

The *Spanish* class can scarcely be too highly commended: there was hardly an indifferent pen; the competition was very close, and it was evident that condition had influenced the opinions of the Judges. The general improvement in this class is, indeed, extraordinary, as no doubt exists, that oft-times first prizes have been obtained by fowls, far inferior to those that, at Chester, were compelled to take a fourth position.

In the *Game* classes, a peculiar feature must be obvious to any attentive spectator, viz., the very high condition in which these fowls are now exhibited, compared with those of former years. A more striking example could not be imagined, than the cock in the first first-prize pen, and there were not a few others closely approximating.

The *Cochins* were undoubtedly the worst class in the Show, the owners, in many instances, having quite neglected to properly match their birds, whilst deformed combs were comparatively general.

The *Brahma* class was far better than usual; indeed, the match and condition of these birds excited many expressions of favour.

The *Hamburgh* fowls, as might naturally be expected, did not show to their usual advantage; as at the period of the year just prior to moulting, not only does the ground colour fade exceedingly, but even the markings always lose the greater proportion of their lustre; still, in the four classes allotted them, many most excellent fowls were to be selected.

Class 11 (*Polands*) was, numerically considered, a weak one; not so as to quality, however; indeed, they proved themselves universally attractive to the company assembled.

The season of the year is particularly adverse to the exhibition of first-class *Geese*, yet, I will venture to say, more colossal specimens have rarely, if ever, competed.

I confess myself somewhat disappointed in both the *Aylesbury* and likewise the *Rouen Ducks*; both varieties were small in size, and a goodly number faulty in character. The class for *East Indian Ducks* made ample amends for the shortcomings of their neighbours; for never before has there been exhibited so excellent a collection.

The *Turkeys* were a marvellously good class, and it is really difficult to offer an opinion as to how far these aristocratic birds are capable of improvement.

Having thus cursorily given a few general remarks on the individual classes, and also expressed the universal opinion of those best informed in such matters, as to the excellence of the collection as a whole, I cannot forbear alluding to the continually thronged state of the ground, appropriated to the poultry, comparatively with any other portion of the Society's exhibition. Such I consider as convincing proof (were any necessary) of the popularity of this department, especially among lady visitors.

This is easily accounted for, as it is well known our agricultural friends have, from time immemorial, generally appointed the proceeds of the poultry-yard as "pin-money" to the female portion of the household. Where well-conducted, few persons would imagine the aggregate amount from the sale of eggs and yearly produce. They not unfrequently *entirely clothe the family*, and by so doing naturally secure the especial interests of their *female* supervisors; yet this very important item in agricultural produce, the Royal Society have doomed to exclusion from their future prize lists, to its manifest neglect and *discouragement*. I trust, however, popular opinion may cause a reconsideration of this important matter.

MERITS OF TUMBLERS.

I AM startled at an answer, printed in your issue of July 6, to a question from a correspondent, signed "ONE WHO WOULD LIKE TO KEEP THE BEST," on the subject of Tumbler Pigeons. In answer, B. P. B. writes, "The high fancy birds are bred to shape and feather. They are not esteemed as 'Tumblers, for they rarely tumble much.'"

Now, I beg to say, that, for some time past, I have kept Tumblers (at least, so I fancied them), and my great, chief, — nay, only reason for keeping them is, on account of their beautiful flight, and of their peculiarity of tumbling. May I, therefore, without for a moment calling into question the

opinion of your noted correspondent, ask B. P. B. why was this breed of Pigeons originally called Tumblers? In what other attainment does their value consist? For surely they are diminutive, and I see no remarkable beauty in feather or shape; and also, why did he not allow us to remain in blissful ignorance, we who have been fancying ourselves proprietors of a most remarkable breed, merely on account of their liability to tumbling, or shall I call them "Rolling Dutchmen?" And lastly, from what source does he obtain his information? Or is it merely his own experience?

In conclusion, may I say, that in my gross ignorance, I have shot and otherwise put to death several of this breed of Tumblers, for the sole reason that they were wanting in what I, in my ignorance, considered their chief attribute.

Would any other of your correspondents give their opinion? — A WELSHMAN.

[In reply to "A WELSHMAN," I have to apologise for startling him from his equanimity. Nevertheless it is a fact, that in the high-bred, short-faced Tumblers, birds worth from £5 to £10 each, the fact of their tumbling is never taken into consideration. True, I have heard my father say he had seen an Almond cock that would tumble in flying across a loft; and Mr. J. M. Eaton, in his excellent work on Pigeons, also mentions having seen a flight of Almonds tumble; but such are the exceptions, not the rule.

The reason is very evident. The birds are bred exclusively for competition on the five points, and are exhibited accordingly, and it would be impossible for the Judges, or umpires, to decide which of the two or more birds competing tumbled best, they only seeing them in the show-pens. Thus, this highest of all properties, flying and tumbling, have been totally disregarded, and the bird in consequence has almost lost the very property from which it derived its name.

If "A WELSHMAN" is desirous of knowing in what the five properties consist, I advise him by all means to procure Mr. J. M. Eaton's book, which is advertised in these columns. I hope, however, "A WELSHMAN" will not give up his fancy for flying and tumbling birds, which, to my liking, are much superior. There is no part of the Pigeon fancy that so much delights me as the sight of a good soaring and tumbling flight of Tumblers; yet I cannot shut my eyes to the fact, nor would it be right of me to attempt to blind others to it, that our good flying and tumbling birds would have little to show in the exhibition pen; and if we desired to sell them, none of the dealers would give us more than from 1s. to 2s. 6d. per pair for them; though a person desiring good tumbling birds would, if he could depend on the vendor, give much more, as really good tumbling Tumblers are very scarce.

I should feel pleased to hear again from your correspondent a description of his birds, as their flying and tumbling would be interesting.—B. P. BRENT.

YORK ASSOCIATION FOR THE IMPROVEMENT OF POULTRY.—JULY 16.

FOR some time past a feeling has been very prevalent in this city that an annual Poultry Show ought to be held, for the improvement of the various breeds of fowls; and it was also considered that York ought to have a grand central Poultry Exhibition for the county. In furtherance of these views, an active and influential Committee was appointed, when Mr. John Bainbridge, of Fishergate Villa, consented to perform the duties of Treasurer, and Mr. Robt. Smith, cutler, of High Ousegate, those of Secretary.

The patronage of many of the nobility and gentry of the county was readily obtained; and the Right Hon. Lord Londesborough kindly consented to act as President of the Society. An appeal was made to the public for subscriptions, and, as the movement became a popular one, a most liberal response was made to the call, and in a little time upwards of £100 were obtained. A schedule, offering about that amount in prizes, was published, including the President's prizes of four pieces of plate for the best pen of Dorking, Spanish, Cochin-China, and Game fowls. These prizes consisted of a splendid silver cup, a silver cruet-stand, silver fish knife and fork, and a silver cake basket, the aggregate value of which being about £20. Such a liberal scale of awards soon pro-

cured entries in the various classes; and on the close of the entries the number amounted to 308.

The Judges were—T. B. Stead, Esq., Leeds; — Challoner, Esq., Worksop; and J. O. Jolly, Esq., Acomb Grange.

AWARD OF PRIZES.

SPANISH.—First, Mrs. J. C. Hall, Surrey House, Sheffield. Second, W. W. Brundrit, Runcorn. Highly Commended, J. Dixon, North Park, Bradford. Commended, T. T. Pierson, M.D., Bridlington Quay; W. Bailey, Lower Kennington Lane, London. Thirteen entries.
Chickens.—First, Mrs. J. C. Hall, Surrey House, Sheffield. Second, Mrs. A. Watkin, Walkley, Sheffield. Seven entries.

DORKING (Coloured).—First, P. Barnard, Digby Brigg. Second, Rev. G. Hustler, Appleton, Tadcaster. Commended, Rev. G. Hustler; S. Burn, Whitby. Seven entries.

DORKING (Silver Grey or White).—First, H. W. B. Berwick, Helmsley. Second, A. Pease, Southend, Darlington. Five entries.

DORKING CHICKENS (Any colour).—First, J. Priece, Londonderry, Bedale. Second, C. H. Wakefield, Malvern Wells. Highly Commended, J. Priece, Londonderry, Bedale; Rev. J. F. Newton, Kirby-in-Cleveland, Stokesley. Commended, H. W. B. Berwick, Helmsley; M. Hunter, Green Hammerton Hall; Rev. G. Hustler, Appleton, Tadcaster. Fifteen entries.

COCHIN-CHINA (Yellow or Buff).—First, T. H. Barker, Hovingham, York. Second, T. Stretch, Bootle, Liverpool. Commended, H. James, Walsall; H. Tomlinson, Birmingham. Ten entries.

COCHIN-CHINA (Any other colour, or Brahmas).—First, Miss V. W. Musgrove, Aughton, Liverpool. Second, G. Hutcheson, Prospekt House, York. Three entries.

COCHIN-CHINA CHICKENS (Any colour).—First, T. H. Barker, Hovingham, York. Second, J. T. Sigston, Welburn. Commended, T. H. Barker, Hovingham. Nine entries.

GAME (Black-breasted and other Reds).—First, G. Boot, Chesterfield. Second, R. Woods, Worksop, Notts. Highly Commended, R. Woods; W. Bentley, Scholes, Cleckheaton; H. Adams, Beverley. Commended, Jaques and Robshaw, Knaresbro'. Twenty-two entries.

GAME (Duckwings, Greys, and Blues).—First, G. Boot, Chesterfield. Second, Mrs. Carter, Driffield. Commended, H. Adams, Beverley. Ten entries.

GAME (Any other colour).—First, G. Robinson, Worksop. Second, H. Adams, Beverley. Highly Commended, W. Dawson, Birmingham. Commended, J. R. Rodbard, Bristol. Seven entries.

GAME CHICKENS (Any colour).—First, R. Woods, Worksop, Notts. Second, H. Adams, Beverley. Highly Commended, J. Scott, Skipton-in-Craven. Commended, Jaques and Robshaw, Knaresbro'; H. Wood, Ledget Green, Bradford. Sixteen entries.

HAMBURGH (Gold-spangled).—First, J. Dixon, North Park, Bradford. Second, H. Carter, Holmfirth. Seven entries.

HAMBURGH (Silver-spangled).—First, J. Dixon, Bradford. Second, H. Adams, Beverley. Seven entries.

HAMBURGH (Golden-pencilled).—First, J. Dixon, Bradford. Second, Bird and Beldon, Bradford. Commended, T. W. Jones, Wellington, Salop; T. Robinson, Skipton-in-Craven; E. Crowther, Moor Allerton, near Leeds. Thirteen entries.

HAMBURGH (Silver-pencilled).—First, W. Maud, Victoria Place, Bingley. Second, J. Dixon, Bradford. Eight entries.

POLAND (Black, with White Crest).—First and Second, J. Dixon, North Park, Bradford. Four entries.

POLAND (Gold or Silver).—First and Second, J. Dixon, Bradford. Highly Commended, W. Dawson, Selly Oak, Birmingham. Five entries.

ANY OTHER BREED.—First, W. D. Henshall, Huddersfield. Second, J. Dixon, Bradford. Highly Commended, W. Dawson, Hopton Mirfield; Bird and Beldon, Bradford. Ten entries.

ANY FARM-YARD CROSS.—Second, W. Maud, Bingley. Second, J. Bainbridge, Fishergate Villa, York. (No first prize awarded.) Five entries.

BANTAMS (Gold or Silver-laced).—First, Lady Londesborough, Tadcaster. Second, J. Dixon, Bradford. Five entries.

BANTAMS (Black or White).—First and Second, H. Adams, Beverley. Commended, J. Dixon, Bradford. Eight entries.

BANTAMS (Any colour).—First, H. Churchill, Gloucester. Second, I. Thornton, Heekmondwike. Seven entries.

SINGLE BIRDS.

SPANISH COCK.—Prize, S. H. Hyde, Ashton-under-Lyne. Seven entries.

DORKING COCK.—Prize, P. Barnard, Bigby, Brigg. Highly Commended, C. H. Wakefield, Malvern Wells. Commended, H. W. Berwick, Helmsley. Seven entries.

COCHIN-CHINA COCK.—Prize, H. Tomlinson, Birmingham. Highly Commended, W. Dawson, Hopton Mirfield; Mrs. A. Watkin, Walkley, Sheffield. Thirteen entries.

GAME COCK.—Prize, J. Taylor, jun., Burton Agnes. Highly Commended, J. R. Rodbard, Langford, Bristol; H. Adams, Beverley; Jaques and Robshaw, Knaresborough. Commended, R. Jervis, Skelton Bar, York. Sixteen entries.

SPANGLED HAMBURGH COCK.—Prize, B. S. Sykes, Poulton-le-Fylde. Eleven entries.

PENCILLED HAMBURGH COCK.—Prize, T. Keable, Rowde, Devizes.

Commended, S. Cocker, Sheffield; J. Charlesworth, Chesterfield. Twelve entries.

Ducks (Aylesbury).—First, A. Revill, Hasland, Chesterfield. Second, J. Priece, Londonderry, Bedale. Highly Commended, Lady Middleton, Wollaton Hall, Notts; W. Maud, Victoria Place, Bingley. Twelve entries.

Ducks (Rouen).—First and Second, T. Keable, Rowdefield Farm, Devizes. Highly Commended, T. H. Barker, Hovingham; J. W. George, Beeston Podge, Notts; O. H. Young, Middle Street, Driffield. Ten entries.

Ducks (Any other variety).—First, S. Burn, Whitby. Second, J. Dixon, Bradford. Commended, T. Buckle, Petergate, York. Eight entries.

GEES.—First, J. Priece, Londonderry, Bedale. Second, A. Pease, Darlington. Commended, J. Dixon, Bradford; Lady Middleton, Wollaton Hall, Notts. Four entries.

TURKEYS.—First, J. Priece, Londonderry, Bedale. Second, Miss J. E. Simpson, Field House, Hunmanby. Highly Commended, J. Priece, Londonderry, Bedale. Five entries.

—(*York Herald.*)

TUMBLER PIGEONS.

IN THE COTTAGE GARDENER for July 6th, I observed, in answer to questions put regarding the Tumbler Pigeon, it is said that those which tumble off the hand, or rarely rise from the ground because of tumbling, perhaps have the wing broken. I beg leave to inform Mr. B. P. Brent that this is not the case. I have kept and bred these birds for years, and have had birds of this kind that could not fly up to any thing eighteen inches high; for in making the attempt they only tumbled over, and then found themselves where they were. At present I have birds bred from them that if put on the hand will tumble as often as you please to give them a gentle heave from it, and alight on the hand again. Neither of these birds at any time had either the wing or any other part of their bodies injured. Of the history of the low, or "House Tumbler," as it is called, from the circumstance of its tumbling powers being tested within doors, I cannot speak; but my impression is, that it is the result of careful breeding. In some parts of Scotland, and in and around Glasgow in particular, the Tumbler Pigeon, with a great many fanciers, is a high favourite, and only bred for tumbling, regardless either of feather or form. From breeding thus towards this one point for a length of time, I think the House Tumbler has come. My reason for thinking so is, that in breeding them I find that they do not breed true. Very many of their young do not tumble low, but can fly well.—JAMES PATON, *Stewarton.*

PIGEONS.

(Continued from page 268.)

CLASSIFICATION OF PIGEONS.

IN the present Manual I have endeavoured to give some idea of all the different breeds, varieties, and sub-varieties of our domestic Pigeons. So widely diffused is the love of Pigeon-keeping, and so long has it been in practice, that the varieties are very numerous, each country possessing a great many. It must not be supposed, therefore, that I have described nearly all that are cultivated in the Old Hemisphere, or even in Europe: but I trust there are not many English varieties that have escaped notice.

Pigeons are now taking a prominent part in most of our Poultry Shows, and I much wish I could see a better arrangement or classification in their lists; for, in general, these are drawn up without any regard to the quality of the breeds, or any scientific arrangement or order; indeed, it seems as if the names had been put down at hazard, or just those that were at first thought of; and this list, having been once printed, is rarely altered, and is copied, with all its defects, by other Societies. It is on this account I offer for the consideration of such Committees that feel inclined to improve their lists, a few remarks on the classification of our Pigeons, so far as I am acquainted with them, and I shall conclude this chapter with a model prize list.

Our Pigeons may be properly separated into four divisions, viz.:—1st. Indigenous Breeds. 2nd. Fancy Pigeons. 3rd. Toys. 4th. Mongrels. The indigenous or native wild breeds

of Pigeons are the Blue Rock, and the Chequered Dovehouse Pigeons; but I do not suppose it will be necessary to offer prizes for these, or for any of our native Doves,—as the Ring Dove, the Stock Dove, and the Turtle Dove,—any more than it would be for the common mixtures or mongrels, everywhere too common.

Our present business is, therefore, only with Fancy Pigeons and Toys, between which there is a great difference. The two cannot equitably compete together. The fancy Pigeons have points and properties which mark them as distinct breeds, even if some of them do not originally proceed from different species; for if found wild our naturalists would not hesitate to call them such, even though they differed, apparently, less than these tame breeds do; as these points distinguish their respective breeds, under whatever variety of colour or marking they may be bred.

Toys, on the other hand, are such Pigeons whose value consists in the marking of their plumage or colour of their feathers only. They are either derivable from the domestication of the dovecot Pigeons, or crosses and mixtures of other breeds, and if they lose this one property, are henceforth nothing more than common mixtures or mongrels,—equally good to eat, but of no fancy value.

The fancy Pigeons may again be divided into two; but this division is in some measure arbitrary, or, at least, only complimentary to Pigeon-fanciers. Thus, the four breeds that have long been most in vogue have received the designation of high fancy birds, and on this account are allowed precedence, though, in the eye of the naturalist or the unprejudiced fancier, they are not more distinct or worthy of culture than many other fancy sorts.

The classification which naturally follows is, then :—
1st. *High Fancy Birds*.—The Carrier, the Almond Tumbler, the Powter, and the Runts.

2nd. The Fantail, the Jacobin, the Trumpeter and Laugher, the Turbit and Owl Pigeons, the Barb, the Antwerp, the Frillback, and the Lace Pigeon.

There are also some others that have distinctive peculiarities, that give them a right to a place in this second division, but which are too little known here to require a separate class at our Shows. They are—The Mahomet, Swallow-tailed, Carmelite, Friesland Runt, Finnikin, Turner, Smiter, and the Crested Pigeon.

3rd. *Toys*.—The more common are—The Suabian and other spangled Pigeons,—as Hyacinths, Porcelains or Ermines, Archangel, Nun, Swallow, Magpie, and Spot. The less known Toys are—Priest, Monk, Capuchin, White Archangel, Breast-plate, Helmet, Shield, Swiss, Starling-breasted, Stork, Gull, Martin or Lahore, White Spot, and Ice Pigeons, &c.

In the following list, which I offer as a guide to Committees making out their schedules, I have endeavoured to place what I believe to be the original colour or variety of each breed first :—

MODEL PRIZE LIST,
FOR THE CLASSIFICATION OF PIGEONS.

CLASS.	BREED.	CLASS.	BREED.
<i>Carriers.</i>		<i>Runts.</i>	
1.	Black	16.	Leghorn
2.	Dun	17.	Roman
3.	Blue	18.	Spanish
4.	White	19.	Scandaroon
5.	Pied, or any other Colour.	20.	Any other Variety.
<i>Tumblers.</i>		<i>Fantails.</i>	
6.	Whole Colours and Mottles	21.	White
7.	Almonds	22.	Black
8.	Baldheads	23.	Any other Colour.
9.	Beards	<i>Jacobins.</i>	
10.	Any other Variety.	24.	Black Baldheaded
<i>Powters.</i>		25.	Red Baldheaded
11.	Blue Pied	26.	Yellow Baldheaded
12.	Black Pied	27.	White, or any other Colour.
13.	Red Pied	<i>Trumpeters.</i>	
14.	Yellow Pied	28.	White
15.	White, or any other Colour.	29.	Black Mottled
		30.	Any other Colour.

CLASS.	BREED.	CLASS.	BREED.
<i>Laughers.</i>		<i>TOYS.</i>	
31.	Any Colour.	<i>Spangled Pigeons.</i>	
<i>Barbs.</i>		50.	Suabians, Spangles
32.	Black	51.	Hyacinths, Porcelains, Victorias, and Ermins.
33.	Dun	<i>Archangels.</i>	
34.	Red	52.	
35.	Any other Colour.	<i>Nuns.</i>	
<i>Turbits.</i>		53.	Black-headed.
36.	Blue-shouldered	54.	With any other Coloured Heads.
37.	Red-shouldered	<i>Terns, or Sea Swallows.</i>	
38.	Yellow-shouldered	55.	Blue Winged
39.	Any other Coloured Shoulders.	56.	Any other Coloured Wings.
<i>Owls.</i>		<i>Magpies.</i>	
40.	Blue	57.	Black
41.	Silver	58.	Any other Colour.
42.	Any other Colour.	<i>Spots.</i>	
<i>Antwerps (long faced).</i>		59.	Black
43.	Strawberry or Mealy	60.	Any other Colour.
44.	Any other Colour.	<i>Extra Class (for Toys).</i>	
<i>Antwerps (short faced).</i>		61.	Such as Priests, White Spots and Angels, Helmet, Shield, Breast-plate, Starling, Stork, Martin, Gull, Half-moon, Ice Pigeon, &c.
45.	Blue and Chequered	62.	An Extra Class for Foreign or Wild Pigeons of various species
46.	Any other Colour.		
<i>Frillbacks.</i>			
47.	Any Colour.		
<i>Lace or Silky.</i>			
48.	Any Variety.		
<i>Extra Fancy Pigeons.</i>			
49.	Such as Finnikin, Mahomet, &c.		

—B. P. BRENT.

OUR LETTER BOX.

CARRIERS PITCHING SHORT.—“I have a pair of Carriers about twelve months old, and also three young ones. I am training the old cock to come a long distance. The first time I took him about half a mile from home, and turned him loose; the very first house he came to he dropt on it; but in two minutes he rose again, and never stopped till he found home. I have taken him three or four times to this place, and he always drops on the same house; and I have taken him to many places, and he always drops. Now this is a very bad practice. I wish you could tell me a plan to break him of it. I have heard of Carriers rising to a great height in the air in search of home, but my Carrier goes very little higher than a tall tree. I have also tried my young ones, and they are worse than the old ones, both for dropping and flying low. They would fly better if they would fly round the house, but I can scarcely drive them off it.”—CONSTANT READER.

[The habit of pitching when tossed is a very bad and disagreeable practice, of which it is difficult to break the Carrier. The best method I can recommend, is to keep the pigeons confined to their loft, turning them out for exercise only twice a day, and keeping them on the wing as long as practicable, and not allowing them to get into the habit of lazily loitering on the roof, but as much as possible to connect liberty with flying. But let the loft be comfortable and well supplied with all the pigeons require.—B. P. B.]

EGG-EATING HEN (*A North Countryman*).—The only way to check this bad habit, is to watch and take away the egg as soon as laid, keeping a nest egg of chalk or other material in the nest. It is a habit the hen is liable to recur to.

LONDON MARKETS.—AUGUST 2ND.


POULTRY.

The tendency of the market is still downwards. The supply increases, while the demand falls off. A few very large and choice fowls still sell well, as the price for the last two months has induced breeders and feeders to make hay while the sun shines, and they preferred selling while they were dear to the risk of keeping. Hence their scarcity.

	Each.		Each.
Large Fowls ...	6s. 6d. to 7s. 0d.	Leverets.....	3s. 0d. to 4s. 0d.
Small ditto.....	3 6 „ 4 0	Pigeons	0 8 „ 0 9
Chickens.....	2 0 „ 3 0	Guinea Fowls .	0 0 „ 0 0
Geese	6 0 „ 7 0	Rabbits	1 5 „ 1 6
Ducks	2 6 „ 3 0	Wild ditto.....	0 8 „ 0 9

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WEEKLY CALENDAR.

Day of Mth	Day of Week.	AUGUST 10—16, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
10	Tu	Ammobium elatum.	30.117—30.050	80—61	W.	.01	39 af 4	32 af 7	6 af 8	1	5 7	222
11	W	Ammobium plantagineum.	30.129—30.090	78—54	S.W.	.07	40 4	30 7	18 8	2	4 59	223
21	Th	Amphiconia arguta.	30.119—30.031	83—52	S.W.	.06	42 4	28 7	30 8	3	4 49	224
13	F	Anacampseros arachnoides.	29.963—29.695	83—57	S.E.	.53	43 4	26 7	41 8	4	4 39	225
14	S	Anacampseros polyphylla.	29.723—29.647	76—42	W.	.12	45 4	24 7	55 8	5	4 28	226
15	SUN	11 SUNDAY AFTER TRINITY.	29.807—29.751	73—53	W.	.59	47 4	22 7	12 9	6	4 17	227
16	M	Anacampseros varians.	29.938—29.743	81—55	E.	.00	48 4	28 7	34 9		4 5	228

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 73.8° and 51.4°, respectively. The greatest heat, 93°, occurred on the 10th, in 1842; and the lowest cold, 32°, on the 13th, in 1839. During the period 129 days were fine, and on 88 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE present is a most important time, and should not be neglected, for planting several autumnal and winter crops, and for sowing for next spring and summer produce.

BROCCOLI.—Plant out the latest crops, if not already done.

CABBAGE.—Sow, to remain in the seed-beds through the winter, and *Red Dutch* for summer use. Prick out the plants of former sowings, in nursery-beds, that they may get stocky previous to their final planting.

CARROTS.—Thin, and weed the *Early Horn*.

CELERY.—Give the trenches a good soaking of water just before earthing-up the first time. Keep the leaves closely together, and the soil pressed rather firmly around, when earthing-up the plants. Care to be taken that the earth does not get into the heart of the plant.

CUCUMBERS.—Remove weak and useless shoots, dead leaves, &c.

ENDIVE.—Sow, for a late winter crop. Plant out from the seed-beds that were sown in June, in a dry and warm situation, about one foot apart from row to row and plant to plant.

FRENCH BEANS (DWARF).—Continue to keep the crops closely gathered; for if any are allowed to remain, when too old for use, their productiveness will be much abridged.

LETTUCE.—Sow *Brown* or *Bath Cos* and *Hardy Hammersmith*, for standing through the winter. Plant out from the late sowings, for autumn use.

ONIONS.—Sow a few, for salads in winter. Bend down by hand the stiff-necked ones of the ripening crops, in order to check their growth, the sooner to get them off the ground, in order to be succeeded by *Winter Greens*.

PARSNIPS.—Keep them clear of weeds, and thin where necessary.

POTATOES.—The *Ash-leaved Kidney*, intended for seed, may be taken up, and exposed to the sun till they green.

RADISHES.—Sow *Black Spanish*, for succession; and a liberal supply of *Normandy-curved Cress*, which will continue in perfection for salads during winter.

SPINACH.—Sow, for the whole winter's supply, from the 12th to the 20th, according to the situation.

TOMATOES.—Remove all leaves that shade the fruit, to expose them more fully to the ripening influences of the sun.

TURNIPS.—Sow, after rain, for spring use. Hoe between, and thin the crops sown last month.

WINTER GREENS.—Plant out wherever there is room.

FRUIT GARDEN.

STRAWBERRIES.—Continue to make fresh plantations, and remove the runners that are not wanted from the

old plants. The plants in pots, intended for forcing, to be kept well supplied with water.

WALL TREES.—No delay should now be made in pruning and nailing them in, as advised last week. The autumn is fast approaching when solar light will be much diminished, and heavy rains ensue. We are sometimes surprised, after all the advice that has been given by the best authorities, to see the branches of fruit trees sprawling some distance from the walls of suburban villas, and to hear complaints, as a natural consequence, "that our fruit trees never bear," or that "the fruit is few and far between."

FLOWER GARDEN.

Propagation of stock for next season should now be commenced in earnest, to secure a lot of strong, well-established plants, that will be fit to be exposed to the open air next month, to harden them off, the better to keep through the winter.

ANEMONES.—Take up, and put them in a dry place. Sow seed: the least sprinkling of earth over the seed is sufficient.

AURICULAS (in pots) to be repotted into fresh compost,—half rotten cowdung and sandy loam, or shifted into larger-sized pots, as they may require, for their autumn growth. Detach offsets and dead leaves, and prune decayed parts of the root or fibres; when fresh potted, to be watered, and placed in a shady situation.

CARNATIONS and PICOTEEs.—Layer without delay, for unless they are well rooted in good time they do not get well over the winter. A few leaves must be removed for the purpose of cutting the stem to layer, but avoid the barbarous practice of cutting off the leaves square, or shortening them at all. It seems to be forgotten by many, that roots are formed by the action of the leaves.

DAHLIAS.—Thin out the beds, and contrive by all means to catch the nightly depredators that prey upon them.

DAISIES.—To be parted, and planted in beds, or edgings, for borders.

HOLLYHOCKS.—Water liberally. Pull up all worthless seedlings as they appear. WILLIAM KEANE.

BEDDING PLANTS AND GLOXINIAS.

IF any of my lady readers happen to have a whole bed of *Bouvardia longiflora*, I should feel obliged for a note about it, saying how it does, how it looks, how it stood the heat last June, and the rains of July. I should, also, like to hear a general opinion on its merits as a bedder; for, although I had so confidently written on it, for this purpose, it was merely from rough guessing, as one might say,—I never saw a bed of it. About twenty years since, *Bouvardia splendens* used to be very generally bedded under the name *triphylla*, and *angustifolia*, which was, and still is, a smooth variety of *triphylla*. But one very seldom sees

it now, although more easily propagated in the spring than *Tom Thumb's*. All we used to do was to take up the old plants with balls, and keep them like cut-down Fuchsias,—that is, anywhere out of sight, where the frost could not reach them, and the balls were not likely to become too dry. Then, in February, dock the roots very freely, divide the old stools into moderate-sized plants, and make cuttings of every morsel of the roots. I have seen them, the roots, cut into half-inch pieces, and sown in pans, like seeds, and not one out of a hundred would fail of sprouting just like seedlings. But such very small plants would only be fit to edge round a bed the first year, to flower in the autumn.

There are no Bouvardias in the Experimental Garden yet, and they do not seem to know anything about them for bedding in our public gardens. To see a row, or a patch, of them in a nursery now and then, can give no idea of their real merit for a whole season.

On the evening of St. Swithin's day, I received a new scarlet *Zelinda* Dahlia, to be tried in the Experimental. It was raised by a gentleman's gardener, and the gentleman tells me, in a letter, that they have a whole bed of it this year in the flower garden. I wrote to him to say, that in case my plant should be too late to show its full value, the next best plan would be, to cut one of his best plants at the surface of the ground, and send me the whole top to be judged. There is no other way, short of seeing it growing in a bed, by which a safe opinion can be given. The florists put me up to that move, one of the very best moves I have ever known them to make. A plant of the new *White Zelinda* was sent to me from Salisbury, last September, or October, in that very state. I gave a very good opinion of it, and now I am ready to hear how it has turned out among our readers. They ought to have sent me a dozen, or, at least, half a dozen of it, that I might be able to back my opinion, if it is so good as I took it to be, or to eat my own words, as the saying is, if I thought otherwise. Dahlias are not great favourites at the Experimental, and I never take in Dahlias on trial, or try anything for a stranger, without being handsomely paid for it, before the experiment begins.

Last April, I mentioned three kinds of Vegetable Marrow, and three parties from whom I wished seeds of their kinds for trial. I never make a charge for an experiment when I make these requests. One of the said parties could not send the seeds, as I thought at the time, because that kind never, or very seldom, seeds in England. But several others sent me packets of seeds and wished me to grow them, and of course report on them afterwards; but as these patrons did not each send a £5 note, the smallest sum I charge for one experiment, I did not sow any of their seeds. The fee of £5 is just one-half of the fee I used to ask for such trials when I was "a gentleman's gardener," as I can prove by the last letter I had from Sir William Middleton, with whom I had many opportunities of making my £10 charges. After going over his own garden statistics, last spring, he mentioned a collection of seeds he received from a noble lord,—from a "likely place" abroad,—"but I did not receive your usual fee of £10 with them," which was to cover the charges of rearing them. I never looked on a parcel of foreign seeds in the light of a gift, as some people do;—that trade is a nuisance to some gardeners;—but I look at, and think of, every plant, root, and seed which is sent, at my own request, to the Experimental, as a valuable gift, for which I am responsible to make the best use of,—that is, to let the world know what it really is, or is likely to become.

SCARLET GERANIUMS.—Mr. Kinghorn sent me plants of all his new seedlings of this race, last May: his *Christina* is exactly the same as my own seedling

Victoria Rose, which name, as no one had the kind from me, I hereby cancel in favour of his name. It is the best bedding plant we have of the *Lucia rosea* breed. I bedded it last year, and this season I have it in a box outside the window, and everyone admires it. I think Lord St. Leonards must be partial to that tint of rich, soft, rosy hue, for he never passes without having a sharp look at it. Mr. Kinghorn's *Rose Queen* is the same as my seedling, with the addition of a white mark at the bottom of the two top petals, something like *Lady Holmsdale* and *Duchess of Leeds*, but of much better shape and substance. His Lord John Russell, in another box in one of my windows, has been one mass of scarlet the whole of this summer. It is much closer than *Tom Thumb*, and the flower-stalk is not more than half the length of that of *Tom*; the shade of scarlet, and the eye, are also different. I have had nine or ten very dwarf Scarlets through my fingers for the last few years, every one of which was good; but, judging from three months' trial, Lord John Russell is the freest flowering of them all. Mr. Kinghorn's *Lizzy* is a house plant, after *Triumph de Mont Rouge*, but larger, and much better in shape and substance. The top of the flower is pure white, the centre of the petals a light salmon, and the bottom of a deeper cast; a most beautiful thing in a house; and house Geraniums of the Scarlet race, are the most useful of all in these days, when they stand the dry heat of drawing-rooms and conservatories the whole summer, where the common Scarlets would fall to pieces in a day or two. I have them of all shades, like Dendrobiums,—not one of them worth a straw out of doors; but the conservatory of the Experimental Garden has been in one blaze with them since the Azaleas were over. They are fit subjects for the best conservatory in the country, and *Lizzy* is the best kind of them which can be had, just now, for love or money. None of my seedlings are in the style of *Lizzy*. Aubert Henderson is the best white Geranium of the Scarlet race for house-work; it came from the Pine Apple Place Nursery, and is named after a scion of that stock. *Countess of Beetime*, a dwarf improvement on *Kingsbury Pet*, is a perfect gem for a pot indoors; it should never pass the threshold.

Before I return to beds and bedding plants, allow me to say how the experiment with the Gloxinias turned out. The roots, as I said, were well ripened at the end of last autumn; and, for want of a good store hothouse, we had to make a shift to keep them through the winter. Each root was put into a separate paper bag; each bag was tied as firm as could be; and all the bags—twenty-six, I believe—were put loosely into a box, or basket, and the basket was put into a press, or closet, in an upper room in the house. They were unbagged in March, and plunged in front of a Cucumber box; and there I left them, in my first account, sprouting as strong as possible.

Now for the result. When the tops, or leaves, got too bulky in the front of the Cucumber bed, the plants were taken up gently, and with all the earth embraced by the roots. Each was potted into the flowering pot at once, and all of them were returned to the Cucumber frame, to stand at the back this time, for head room. They were shaded for a little time, and kept pretty damp, and the change to pots did not seem to check them in the least. A division of a cold pit was emptied of bedding plants in the first week in May; the Gloxinias were then removed to the cold pit, and that division was filled up with seed-pans, and newly potted-off plants, and some late things from the propagating beds. All the lot required a close, warm, damp atmosphere, and that they had but the heat at night, or rather in the morning, much lower than many good gardeners believe to be favourable for the Gloxinia tribe; and there was no

attempt at giving artificial heat, beyond putting one fold of mat over the glass. Not one single plant failed, and a more healthy or better-bloomed lot is not in the county of Surrey. The conservatory is quite gay with them now. Some are indoors, in the front hall and passages. One huge plant has been out in the open air for the last month, standing on a Chinese stand in an open verandah, away from the sun till five or six in the evening; and there is not a healthier Gloxinia in England, nor yet in Ireland, as we might learn from the Lord Bishop of Armagh, who can testify, in Ireland, to the pride of our Gloxinias, and the arrangement of the flowers, together with the high style of keeping the grounds.

Therefore, there is no reason why Gloxinias should not be grown by anyone who can have a Cucumber bed in the spring, and a cold pit which can be kept close in summer. The very best of them are not dear, nor yet at all difficult as to watering and giving air; but the hot sun must be kept from them, in the middle of the day, till the leaves are full grown. This is a capital time to buy a new stock of them, as they can be had from the nurseries in bloom. As their blossoms will travel to the land's end, and to the furthest parts of Ireland, without injury, a good way would be to order, first twelve blooms, more or less,—one of a sort of the very best which could be sold, from a guinea to fifty shillings a dozen,—on the understanding, that unless there was a purchase there should be some allowance made for the tin box and postage. Lord M'Donald can have a fresh set of these Gloxinia flowers, from London, on his breakfast-table in the Isle of Sky, any morning before grouse-shooting day; after that, no more about flowers in Sky till snipe shooting is over in November.

At the same time that the Gloxinias were bagged, last November, about a score of kinds of Achimenes were tried, just in the same way; but, what with propagation in the spring and heavy experiments on hand, there was no room to place the Achimenes in heat, or even to stand free of frost; and they remained in the bags from November to May, and seemed fresh enough then. But we, or some of us, were too ambitious, and would have vast quantities of them all over the place; so their scaly roots were rubbed out into single scales, and the whole were sown in drills, across another division of a cold pit, in sand and leaf mould. If that had been done at the time the Gloxinias were potted in March, and the scales were on a genial hotbed, we might have had some thousands of plants; but, as it is, we have not more than we had before, and the first of them will not be in bloom before the middle of August. After that, there will not be sufficient time to grow strong roots of them, or to ripen properly those that will be, or are already made. Therefore, this experiment is just as good to tell as the other, only not so good to us and ours; and Achimenes will keep as easily and as long as Gloxinias; but, unless they are set to grow before the middle of March, it is not safe to divide the roots for propagation—that is, for increasing one's stock of them at that particular time.

D. BEATON.

CUTTING BACK TRAINED FRUIT TREES AT PLANTING TIME.

"I bought, two years ago, at the end of February, from a highly respectable nurseryman, a quantity of fruit trees. My instructions were to cut back the Peaches, Plums, Cherries, and Apricots, when planted; the Apples and Pears to stand over till the following spring. This I obeyed reluctantly enough. I may also remark, that I had instructions *where* to cut. Well, you may judge my disappointment, when, at the present moment, instead of having my wall covered with finely-trained

trees, beginning to bear, as I might have had but for this confounded cutting-back business, I have nothing but poor sickly things, with weak shoots, which I am afraid I shall have to throw out.

"Now, can you inform me what is the use of this wholesale mutilation? I can see very well the benefit of nurserymen cutting back annually, to keep their 'old ewes in lamb fashion;' but is it of any service to the purchaser of well-trained trees, having as many branches as is necessary to cover his wall where they are to stand, to cut back at all? Or, should there not be the requisite number of branches? would it not do to train in the lower ones at full length, and cut back as many of the upper ones as would be necessary to make up the supply? Can you inform me what is the philosophy of the practice—what beneficial change is supposed to be wrought on the trees—is it absolutely required? and is the benefit equivalent to the loss of the fruit for two years longer than might be, and the risk, as in my case, of ruining the trees?"

"I intend getting a fresh supply in the fall, and would, therefore, like to have your opinion how I should act."—A NEW SUBSCRIBER.

HAD you not been a "NEW SUBSCRIBER," you would have found, from the articles of Mr. Kidd and other coadjutors, that the cutting-back system, at least to any great extent, has found no advocacy in this work. If the moving was effected at a proper time, and in the right manner, we would hold with no more cutting back than was required by the unripeness of the points of the shoots, and the necessity for getting more shoots to fill the wall. It would be, perhaps, too much to say, that you were counselled wrong, in cutting back shoots on trees, that were lifted in the usual way, sent in the usual way, and treated in the usual way, and planted at the end of February. Most likely,—if you had left your shoots of the young Peach, Apricot, Plum trees, &c., of their whole length in March, or the end of February planting, and had taken no particular methods to induce root action by warmth and moisture, nor to check evaporation from the stems and shoots, when as yet there was an imperfect root action to supply that perspiration,—you would have found that these shoots would have had enough to do to remain just much as they were, without making much new growth for the first year, and thus get into a stunted habit. A knowledge of this fact might be the basis on which the nurseryman recommended you to cut your shoots well back; and, if the roots are in capital working order, this roundabout, undoing mode of doing a thing, or gaining a purpose, sometimes answers better than might be expected. After giving what force we could to such a circumstance, we frankly own, that we can see no use in such mutilation, that the shortening should only be resorted to when the shoots are not mature, or more are wanted to fill the wall; that otherwise we fail to perceive any philosophy in the practice, and can perceive no benefit that will form an equivalent for the loss sustained in branches and time.

Training trees in a nursery to be lopped back when transferred to a garden will probably go on, until two practices are altered, and planters as well as nurserymen get freed from carelessness in this matter. For instance, if our present correspondent had planted these trees carefully at the end of October, the ground would still have been warm enough to encourage fresh rootlets. If the trees were taken up carefully, and carefully sent, they would suffer but little. If a few green leaves remained they would keep up the circulation, and a dash from the syringe, and a slight shade in the hottest part of the day, would prevent flagging and shrivelling. The very lifting would induce a more perfect maturation of wood, and before the winter set in severely the plant would be able to hold its own. Such a plant, with the soft points merely removed, would lengthen and throw out healthy lateral

shoots, and soon cover the wall. Did the planter even cut back pretty freely, the vigorous state of the roots would soon produce a correlative vigour of branches. It would thus have some of the characteristics of what our correspondent humourously styles the nurseryman's old ewe, and which he can thus easily change into young lamb fashion at pleasure. In fact, his cut back, old plants are in a similar position to a strong, healthy, Willow stool. None of these characteristics can exist to any great extent, in the case of trees taken up, transferred in a bundle to their destination in March, put into the ground at the coldest part of the year as respects the soil, and with the increasing heat telling chiefly on the swelling and expansion of buds into shoots, before there is healthy root action to supply their wants. Spring planters, then, unless they can use extra care, have themselves, and not nurserymen, to blame for many of the evils and disappointments that ensue.

I have several times, when nurserymen and seedsmen were blamed, attempted to show, that the blame rather rested upon gardeners than upon them. But there is one thing, as respecting fruit trees, that is deserving more attention than it practically receives,—I do not mean so much from the heads of firms, as that they shall see and insist, that fruit trees, and especially trained ones, shall be taken up with more care than is frequently practised, under what is called the drawing system, by men who, it may be, are only employed for short intervals, and feel no particular interest in the way the work is done. I have seen beautiful trained fruit trees, sent with their roots so chopped and ruptured, and withal sent packed in such dry material, that the fine trained tree, for all practical purposes, was scarcely so good as a healthy maiden plant, wrought that or the previous season. There might be a chance, even with such trees, if planted very early in the autumn. Planted late in spring, the shoots, if left, would most likely become stunted; if cut back,—in opposition to the general rule, that roots and tops should not be cut back at one and the same time,—there is a good chance that many of them would follow in the wake of those of our correspondent. So much is there of fact in this latter representation, that many gardeners, on going to a nursery, not only choose their plants, but see them taken up carefully, and the roots surrounded with damp mulching. Without they can do this, they make it a point to order maiden plants; these they can train, and more carefully, at pleasure. The training of trees is a matter of much importance to nurserymen and their customers. If such trees are taken up with more care, even if more should be charged, and if planters could only make up their minds to plant in autumn, then the cutting back almost to the stump of trained trees, and thus rendering all the training of no avail, will soon be numbered among the things of the past.

R. FISH.

ANNIVERSARY OF THE POMOLOGICAL SOCIETY.

A NUMEROUSLY attended Meeting of the BRITISH POMOLOGICAL SOCIETY was held at St. Martin's Hall, Long Acre, on Thursday, the 5th inst., ROBERT HOGG, Esq., Vice-President, in the chair.

The following gentlemen were elected ordinary members:—

JOSEPH MARTINEAU, Esq., Basing Park, Alton.

RICHARD S. YATES, Esq., Sale, Cheshire.

RICHARD ELLISON, Esq., Sudbrooke Holme, Lincoln.

E. MILNER, Esq., Oxford House, Anerley Road, Norwood.

Mr. JAMES SCLATER, Nurseryman, Exeter.

Mr. JOHN PERKINS, Nurseryman, Leamington.

Mr. WILLIAM IVESON, Sion House, Isleworth.

This being the annual Meeting of the Society, the accounts for the past year were submitted and approved. After paying all the expenses incurred in the management of the Society, there was a balance in hand. Some alterations were made in the Rules 10 and 11, to make them accord with the new days of meeting, as they have been arranged for the current year. Mr. Edmonds, of Chiswick, and Mr. Busby, were added to the Council, in the room of Messrs. H. Low, and John Lee; and Mr. Davidson was appointed to the office of Secretary, in the room of Mr. John Spencer, resigned. The office of Assistant Secretary was abolished.

PEACHES.

A Seedling Early Peach was received from Mr. RIVERS, of Sawbridgeworth. It is of small size, about the size of the *Acton Scot*, or the *Early Anne*; round, of a sulphur-yellow colour, flushed with crimson on the side exposed to the sun, and mottled with deeper crimson. The flesh is yellow, pale pink at the stone, from which it separates freely, very tender and melting, remarkably juicy, sugary, and vinous, and with a rich, delicious flavour. The stone is small, rugged, and thick, and the kernel bitter. This seedling was raised from the *Early York*, but is said to be ten days earlier than that variety. Mr. Rivers also sent specimens of the *Early Anne*, grown in an orchard-house under similar circumstances, but it was very much inferior in flavour.

Mr. RIVERS also sent specimens of the little Peach called *Petite Mignonne*, a nicely-flavoured, early variety.

Mr. EDMONDS, of Chiswick, brought a specimen of the *Kew Early Purple Peach*. This is what is known also by the name of *Royal Charlotte*. The fruit was ripened against a wall, in the open air, and was perfectly matured; but the flesh was dry, and neither sugary nor vinous.

NECTARINE.

Mr. RIVERS exhibited specimens of his seedling from the *Stanwick Nectarine*, and it was found to maintain the same excellent properties as last year.

APRICOTS.

Mr. JAMES VEITCH, of Exeter, sent specimens of three varieties of Syrian Apricots, all of which have sweet kernels. One of them, called the *Kaisha Apricot*, has for some years been in cultivation. The fruit of this variety, as exhibited, was small, uneven in its outline, and depressed on the apex; it has a deep wavy furrow on one side, which extends from the base to the apex; the skin is yellow, with orange cloudings, and the flesh, which separates freely from the stone, is, in those specimens not highly ripened, mealy and pasty, but in those which have russet markings on the skin, and which appear to be highly ripened, it is much more juicy and highly flavoured; but, altogether, it is an inferior variety to the *Moorpark*.

No. 24, Seedling Apricot, is of the size and shape of the *Kaisha*, and very similar to it in flavour, but perhaps hardly so good.

No. 27, Seedling, is a most delicious variety, and when a little shrivelled is a perfect sweetmeat. The fruit is somewhat oval in shape, an inch and three quarters long, and an inch and a half wide. It is marked on one side by a shallow suture, and it is slightly hollowed at the apex. The skin is primrose yellow in the shade, but as it becomes highly matured, and where it is exposed to the sun, it assumes an orange tinge, and speckled with crimson on the sunward side. The flesh parts freely from the stone, and is of a deep orange colour, and gelatinous appearance; remarkably

melting and juicy, sweet and richly flavoured. Mr. Veitch stated, in a communication, that he has several standards of this variety in the open ground with several dozens of fruit on them, but not yet ripe.

GRAPES.

Mr. PAUL, of Cheshunt, sent bunches of a variety of *Sweetwater* Grape, called *Froc La Boulay*, and which is recommended by the French as the best variety for out-door cultivation. These were grown in an ordinary greenhouse, and were very similar, if not identical, with a variety known as the *Prolific Sweetwater*.

Mr. LANE, of Berkhamstead, sent a bunch of *Wilmott's Muscat Muscadine* and of *White Frontignan* for comparison. The bunches and berries are exactly alike, and both have the same musky flavour; but it was thought by some that *Wilmott's Muscadine* was rather firmer in the flesh than the other.

Mr. WIGHTON, of Cossey Hall, near Norwich, sent a bunch of a Seedling Black Grape, which was thought to possess considerable merit. It is supposed to be a seedling, between the *Black Hamburgh* and *Black Prince*, and is considered by Mr. Wighton to be well adapted for a late-house vinery, as it is an excellent keeper, and not so thick-skinned as some other late sorts; the leaves die off red, and the plant has the peculiar habit of showing fruit at the fourth or fifth joints. It was the opinion of the Meeting that this is an excellent variety, and Mr. Wighton was requested to send it again about Christmas, so that the Society might judge of its keeping properties.

Mr. W. WATT, gardener to Sir Thomas Whichcote, Bart., Answarby Park, near Folkingham, Lincolnshire, sent three varieties of Grapes, brought from the north of Spain twelve months ago. No. 1, said to be "one of the best Spanish dessert varieties, frequently met with at the tables of the great, and much esteemed for its musky flavour," proved to be *Grizzly Frontignan*. No. 2 is a peculiar-looking variety. The stalk of the bunch and the berries are of a pale rose or flesh colour, and covered with a delicate bloom. The berries are about medium size, and round; the skin remarkably thin; the flesh firm, and, though very sweet, not highly or pleasantly flavoured; the flavour rather mawkish for want of acid. No. 3 is said to be a vineyard variety, highly esteemed, and, though not a large bunch, the plant is an abundant bearer. This was considered a much superior variety to No. 2. The berries are round, and of a greenish colour, and possess very excellent flavour; the flesh is much more melting, and does not adhere so closely to the skin as in the other variety. If well grown this will prove an excellent Grape, rich in flavour, and perhaps, if, as is stated, it is an abundant bearer, will prove a valuable variety for pot culture.

PLUMS.

Mr. LANE, of Berkhamstead, exhibited in a pot a plant of *Prunus myrobalana* (the *Myrobalan*, or *Cherry Plum*), which was literally studded with fruit. It was a beautiful object, the bright cornelian fruit contrasting pleasingly with the dark green foliage,—a more ornamental plant could hardly be conceived.

Mr. RIVERS exhibited a dish of his *Early Prolific Plum*, which was quite ripe.

MELONS.

Mr. ROBERT ELPHINSTONE, of Flixton Hall, sent a specimen of his *Hybrid*, upon which the Society gave a high opinion last year; but the fruit on this occasion was not in condition. He also sent a new variety, raised from a cross between his *Hybrid* and *Trentham Hybrid*, but this also was not in condition.

Mr. J. POTTLE, of the Grove, Little Bealing, near

Woodbridge, sent a specimen of a new variety of *Melon*, raised by himself. It belongs to the round class, and is white and netted. The skin is remarkably thin, the flesh very melting, and the flavour excellent. The Society considered it a variety of great excellence.

MULBERRY.

Mr. JAMES VEITCH, of Exeter, exhibited fruit of a new White Mulberry, with the following remark:—"This is the first year of fruiting the *Syrian Sweet White Mulberry*, which is against an east wall. The foliage is very fine, and, as a standard, it makes a very ornamental tree, worth cultivation, even if it never bore fruit." The fruit, as exhibited, is as large as the common Black Mulberry, but is pearly white, and the taste is perfectly sweet. If allowed to hang, this would dry and become a sweetmeat, as it does in Syria.

APPLES.

Mr. TURNER, of Slough, brought some of *Lord Suffield Apple*, a variety grown in the midland counties, and which is said to be an excellent bearer, and one of the best culinary Apples.

Mr. SCLATER, of Exeter, sent a Seedling Apple, very highly coloured, and covered with a beautiful bloom, which appears to be a good early kitchen Apple.

Mr. RIVERS brought specimens of *Early Harvest*, the best of all the early dessert varieties.

Mr. WIGHTON, of Cossey Hall, sent specimens of two varieties found in the Norwich markets, under the names of *Margaret* and *Maid's Legs*.

CURRANTS.

Messrs. MILNE, ARNOTT, and Co., of Vauxhall, exhibited excellent specimens of *White Dutch Currants*, from plants, two years old, in the nursery quarters.

INDIGOFERA DOSUA.

(NEW FLOWERING SHRUB.)

WE have often remarked a disparity in the rate of progress, towards the goal of popular favour, between a *new* hardy flowering shrub and a *new* florists' flower. True it is, and a little reflection is sufficient to explain the anomaly. Our Roses, Pelargoniums, and such plants are of a fashionable throng, and the moment a new member is obtained the graceful neophyte is paraded forth with gay, floating banners, amid the flourishing of trumpets and the noise of fame. The new flowering shrub, though possessed of the same intrinsic excellence, is less favourably circumstanced. Naturally slow in its development, belonging to no gay coterie, it does not come thus prominently before the public. It moves slowly and silently into the pathway of fame, depending on time and its own merits for patronage and position.

We have been led to these remarks through having recently met with a beautiful new hardy shrub at the Cheshunt Nurseries. The proprietors, Messrs. Paul and Son, inform us that it was received from the south of France, some two years since, under the name of *Indigofera dosua*. This grows naturally in Upper Nepal, at Suemba, where it is called *Dosi-swa* by the natives, and hence it was named by Professor Don, *dosua*.

The plant is growing in the natural soil of the Cheshunt Nurseries, which is a moderately light garden loam. That it is hardy cannot be doubted, for it has withstood the two last winters, wholly unprotected, out of doors. The plant is now about four feet high, and six yards in circumference, composed of numerous long pointed shoots, resembling a dwarf Willow in general outline. More than a thousand elegant spikes of purple pea-shaped blossoms, averaging three inches in length, adorn the bush at the present time; and, judging from those still unexpanded, there would seem a line of succession long enough to continue the blooming period from this time till November. The stems continue growing during summer, and from the axil of

every new-born leaf springs a spike of flowers. The leaves are composed of small oval leaflets, ranged along a tapering mid-rib, oppositely and in pairs, from eight to ten pairs of leaflets forming a leaf about three inches long.

The Rose has long been considered the queen of flowers and this might with equal justice be installed as the queen of shrubs. Although new, the plant is comparatively cheap, and every lover of a garden should hasten to possess it.

NEW AND RARE PLANTS.

AZALEA OVATA (*Ovate-leaved Azalea*).

Introduced from Northern China by Mr. Fortune in 1843. Flowers pink, appear in June. It is half-hardy.—(*Botanical Magazine*, t. 5064.)

RHODODENDRON GRIFFITHIANUM, var. AUCKLANDII (*Lord Auckland's Rhododendron*).

"This magnificent plant" was sent from the Sikkim Himalaya by Dr. Hooker in 1849. It flowered in May of the present year, in Mr. Gaines' Nursery, at Wandsworth. Flowers white, and very large, being sometimes seven inches across.—(*Ibid.* t. 5065.)

SAXIFRAGA PURPURASCENS (*Purple Himalaya Saxifrage*).

Found in wet places by Dr. Hooker, at from 10,000 to 14,000 feet elevation, in the Sikkim Himalaya. Hardy perennial. Flowers and stem reddish purple, and the whole plant beautiful; the bright, glossy, green leaves being margined with red.—(*Ibid.* t. 5066.)

ISMELIA BROUSSONETII (*Broussonet's Ismelia*).

This has also been included in the genera *Chrysanthemum* and *Pyrethrum*. It is a native of the Canary Islands, at elevations of 3000 feet. Its white flowers, with crimson centres, are striking, during May, in the conservatory.—(*Ibid.* t. 5067.)

CAMPANULA STRIGOSA (*Bristly Bell-flower*).

An annual, native of Syria. Flowers purple. "There can be little doubt that it would prove hardy enough for a border annual, and, perhaps, for bedding out. Even in a pot it has continued flowering for a month."—(*Ibid.* t. 5068.)

BEES IN TASMANIA.

(Continued from page 263.)

BEE management in Tasmania is still rude and unscientific, for the most part; although some few gentlemen, here and there, bestow a good deal of attention on their apiaries. In general, however, bees are little *cared for*; and most unsightly were the corners of gardens (themselves usually very untidy, with all their profusion of vegetable growth), or the bee sheds allotted to the poor bees. Any odd box, nail barrel, or straw skep, large or small, well or ill-constructed, was made to serve the purpose of a bee-hive. I have often wondered to behold a swarm located in a huge tea chest, or still larger candle chest, and content with its dwelling. There appeared, however, to be a marvellous instinct in these animals, who seemed to know that their adopted country was capable of yielding stores of honey sufficient to fill even these spacious halls.

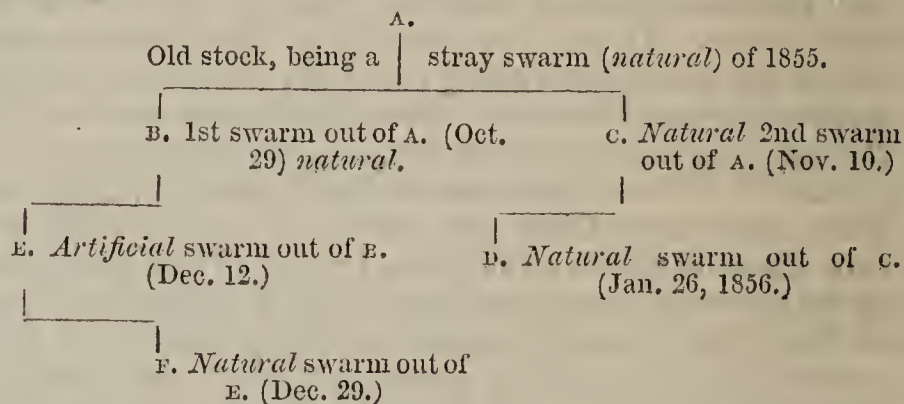
Soon after my arrival, in December, 1853, I became the possessor of a swarm of some three weeks standing, in a small candle box, capable of holding about three pecks of wheat. Owing to a considerable portion of the comb falling out during its removal to my garden, it barely recovered itself sufficiently to survive the following winter (1854). In August, however (a month corresponding to February in the northern hemisphere), the hive was very active, pollen, and even honey, being collected almost as actively as in our European April. So forward did the hive become, that on the 19th of October, drones being about in considerable numbers, I forced a swarm to issue artificially by driving. The new hive took the place of the old one, and did very well. In fact, it threw off a natural swarm about two months later (December 15), and,

becoming very strong again, in about a fortnight was compelled to give another swarm, by driving, on the 27th of December. The *natural* swarm, being not very large, was joined to a hive containing a small stray swarm, which settled in my garden on the 7th of December. Besides these, I obtained two other swarms, which kindly came over from the forest behind. My honey harvest this year, the result of all these experiments and pieces of luck, yielded me 87½ lbs. of the purest honeycomb, besides a weight of about 60 lbs. nett, left in the four stocks designed for my next year's supply.

The next season (1854-5) was not so propitious. Only one stray swarm settled in our grounds, which barely compensated for the escape of one of my own; while two, at least, of the stocks that had survived the winter, did little or nothing. The weather was also less propitious than usual, so that my honey harvest did not exceed a weight of 22 lbs. nett of honeycomb.

At the commencement of the summer of 1856, in November, I found my stock of hives reduced to one, which was subsequently strengthened by the addition of a stray swarm on the 20th of November. The latter did so well (without swarming) that I obtained from it alone 79½ lbs. of super-excellent honeycomb, leaving a sufficiency for the winter nutriment of the bees.

The old hive, too, yielded me good profit,—namely, five swarms, and 108½ lbs. of honeycomb, over and above their own winter supply. The following table of pedigree will serve to show how rapidly and successfully bees multiply in Tasmania:—



In all my experience, I never before heard of a stock becoming the *great grand parent* of a swarm in one and the same season; in other words, of one queen leading forth three successive swarms in one year! Of these, D was not plundered at all; A. gave me 15½ lbs. (in spite of its swarming); B. 24½ lbs; C. 27½ lbs; E. 11½ lbs.; F. 29½ lbs. Of these stocks B and E were destroyed, and the rest were distributed amongst my Tasmanian friends, when I left the island in July last (1857).

Apropos to the subject of artificial swarming, of which, as your readers well know, I have had great experience, I may extract here from my note-book, the following conclusions, which I jotted down somewhere under the line, on my voyage home:—

"The result of my experience of artificial swarming convinces me, that, to be successful, there must be every preparation in the hive for *natural* swarming. In other words, there should always be a quantity of *royal* brood, and *common* brood, too, ceiled over. The greater the abundance of ceiled brood comb, and the *forwarder* the young princesses and other brood, the surer and more successful will be the forcing of swarms."

In *common hives*, the greater part of the population that is fully matured should go off with the swarm, and if there is plenty of ceiled brood-comb (and the more the better) in the old stock, it may safely be removed to a distance,—the swarm taking its place. In *bar-hives* it will suffice to transfer a comb, containing royal brood in a state of forwardness, into a similar bar-hive,—taking care that the queen is *not* upon the comb, but that she remains with the old hive. Then shift as before.—B. & W., July 28, 1858.

THE SLOW WORM (ANGUIS FRAGILIS).

THE Latin name sounds so like a botanical term, that the reader may think it is a plant instead of the "blind worm." This reptile is commonly said to be blind, and often con-

sidered more venomous than the viper. But, having often handled and teased this reptile, I can safely affirm that there is no foundation for either. It has fine dark eyes, and is quite harmless. Its Latin name, however, which means a brittle snake, is most correct; for its body snaps asunder at the least stroke of a stick. Both, however, are viviparous,—that is, they bring forth their young alive; whence the viper has its name. The blind worm, when frightened, darts out its black tongue, like the snake, which is vulgarly thought to be its sting, but is as soft to the touch as a bit of thread. The reptile never shows the least disposition to bite, and, indeed, its teeth are so small that they could hardly pierce the skin. Nor does it hiss, but appears to be entirely dumb.

It is chiefly found near the outskirts of woods, and when disturbed wriggles out of sight by a winding movement. But, like snakes, it can move but slowly on a smooth surface. I mention this more particularly, because some persons imagine that serpents can glide by upright, undulating, movements, which certainly is not the case. Mr. Waterton, whose knowledge of snakes is very superior, ridicules the idea of their being represented in such a position.

Having said that the blind worms are viviparous, I may also mention that, some years back, I stated in another publication that I kept two of them as pets, which produced sixteen young ones, about two inches long, and of a silvery appearance. They wriggled about and put out their tongues as soon as they were bred. The old ones took no notice of them, contrary to what we are told respecting the great care that vipers have for their young.

Old blind worms are about nine inches long, of an ash colour, and less slender than snakes of that length; and I should notice that their tails are not tapering, but end as if partly cut off. I do not think that they cast their skins whole, like vipers, but that it peels off by pieces. At least it was not so with those I had in confinement. Neither am I sure of their food. My pets, however, eat small slugs; but, like all their tribe, can exist long without food. They also, in like manner, lie torpid in the ground during the winter.—J. WIGHTON.

PLANTS IN THE KALAHARI DESERT— CENTRAL AFRICA.

(Continued from page 282.)

ON our way from Khopong, along the ancient river-bed which forms the pathway to Boatlanama, I found a species of Cactus, being the third I have seen in the country,—namely, one in the colony with a bright red flower, one at Lake Ngami, the flower of which was liver-coloured, and the present one, flower unknown. That the plant is uncommon may be inferred from the fact that the Bakwains find so much difficulty in recognising the plant again after having once seen it, that they believe it has the power of changing its locality.

In no part of this country could European grain be cultivated without irrigation. The natives all cultivate the Dourra or *Holeus sorghum*, Maize, Pumpkins, Melons, Cucumbers, and different kinds of Beans; and they are entirely dependent for the growth of these on rains. Their instrument of culture is the hoe, and the chief labour falls on the female portion of the community. In this respect the Bechuanas closely resemble the Caffres. The men engage in hunting, milk the cows, and have the entire control of the cattle; they prepare the skins, make the clothing, and, in many respects, may be considered a nation of tailors.

We passed over the immense pan Ntwetwe, on which the latitude could be taken as at sea. Great tracts of this part of the country are of calcareous tufa, with only a thin coating of soil; numbers of “Baobab” and “Mopané” trees abound all over this hard smooth surface. About two miles beyond the northern bank of the pan we unyoked under a fine specimen of the Baobab, here called, in the language of the Bechuanas, Mowana; it consisted of six branches united into one trunk. At three feet from the ground it was eighty-five feet in circumference.

These Mowana trees are the most wonderful examples of vitality in the country; it was, therefore, with surprise that we came upon a dead one at Tlomtla, a few miles beyond this

spot. It is the same as those which Adanson and others believed, from specimens seen in Western Africa, to have been alive before the flood. Arguing with a peculiar mental idiosyncrasy resembling colour-blindness, common among the French of the time, these savans came to the conclusion that “therefore there never was any flood at all.” I would back a true Mowana against a dozen floods, provided you do not boil it in hot sea-water; but I cannot believe that any of those now alive had a chance of being subjected to the experiment of even the Noachian deluge. The natives make a strong cord from the fibres contained in the pounded bark. The whole of the trunk, as high as they can reach, is, consequently, often quite denuded of its covering, which in the case of almost any other tree would cause its death, but this has no effect on the Mowana, except to make it throw out a new bark, which is done in the way of granulation. This stripping of the bark is repeated frequently, so that it is common to see the lower five or six feet an inch or two less in diameter than the parts above; even portions of the bark which have broken in the process of being taken off, but remain separated from the parts below, though still connected with the tree above, continue to grow, and resemble closely marks made in the necks of the cattle of the island of Mull and of Caffre oxen, where a piece of skin is detached and allowed to hang down. No external injury, not even a fire, can destroy this tree from without; nor can any injury be done from within, as it is quite common to find it hollow; and I have seen one in which twenty or thirty men could lie down and sleep as in a hut. Nor does cutting down exterminate it, for I saw instances in Angola in which it continued to grow in length after it was lying on the ground. Those trees called exogenous grow by means of successive layers on the outside. The inside may be dead, or even removed altogether, without affecting the life of the tree. This is the case with most of the trees of our climate. The other class is called endogenous, and increases by layers applied to the inside; and when the hollow there is full, the growth is stopped—the tree must die. Any injury is felt most severely by the first class on the bark—by the second on the inside; while the inside of the exogenous may be removed, and the outside of the endogenous may be cut, without stopping the growth in the least. The Mowana possesses the powers of both. The reason is that each of the Laminæ possesses its own independent vitality; in fact, the Baobab is rather a gigantic bulb run up to seed than a tree. Each of eighty-four concentric rings had, in the case mentioned, grown an inch after the tree had been blown over. The roots, which may often be observed extending along the surface of the ground forty or fifty yards from the trunk, also retain their vitality after the tree is laid low; and the Portuguese now know that the best way to treat them is to let them alone, for they occupy much more room when cut down than when growing.

The wood is so spongy and soft, that an axe can be struck in so far with a good blow that there is great difficulty in pulling it out again. In the dead Mowana mentioned the concentric rings were well seen. The average for a foot at three different places was eighty-one and a half of these rings. Each of the Laminæ can be seen to be composed of two, three, or four layers of ligneous tubes; but supposing each ring the growth of one year, and the semi-diameter of a Mowana of one hundred feet in circumference about seventeen feet, if the central point were in the centre of the tree, then its age would lack some centuries of being as old as the Christian era (1400). Though it possesses amazing vitality, it is difficult to believe that this great baby-looking bulb or tree is as old as the pyramids.

The necessity of making a new path much increased our toil. We were, however, rewarded in lat. 18° with a sight we had not enjoyed the year before, namely, large patches of Grape-bearing Vines. There they stood before my eyes; but the sight was so entirely unexpected, that I stood some time gazing at the clusters of Grapes with which they were loaded, with no more thought of plucking than if I had been beholding them in a dream. The Bushmen know and eat them; but they are not well flavoured on account of the great astringency of the seeds, which are, in shape and size, like split Peas. The elephants are fond of the fruit, plant, and root alike.—(Dr. Livingstone's Missionary Travels.)

NOTES ON THE DEVELOPMENT OF BULBS AND TUBERS.

By THILO IRMISCH.

(Abridged from the German original.)

(Continued from page 277.)

Lilium candidum, L. *L. Martagon*, and *L. bulbiferum*, L.

If the bulb of *L. candidum* be examined in autumn, the following structure is found. On the outside we observe ovate, rather fleshy scales, which have a scar at their apex (Fig. 1, b). The number of these varies from six to sixteen. The front of the uppermost of these scales, in strong bulbs, is the

scales, varying from six to twenty, without, however, presenting any intermediate forms. These, again, without any transition, are succeeded by from six to sixteen leaves, which, like the scales, are spirally arranged. These enclose in their centre the undeveloped peduncle, richly furnished with leaves (Fig. 2, a); in weak examples no flowers appear, whereas in stronger roots the flower-buds are visible. In the axil formed by the innermost leaf of the basal axis and the peduncle, there is the rudiment of a bud, in the shape of small fleshy scales or cones (c), in which a spiral arrangement is manifest. The larger and outermost of these are next to the flower-stem, without, however, enclosing the smaller. The leaves of the basal axis give rise to the scarred scales of the following year by reason of the decay of their lamina. Exactly as in the Hyacinth, there is an annual succession of scales and leaves, only in the one case the scales, and more especially the basal portion of the leaves, are very broad, in the other far narrower; the outer scales, or sheaths, therefore, of the Hyacinth involve the inner completely, and, consequently, form a tolerably firm bulb; in the Lily, on the contrary, the outer scales merely imbricate the inner, and being fixed to the axis by a small point only, easily separate from one another. In the Hyacinth the produce of several years is combined in one bulb; but in the White Lily, as also in the Crown Imperial, that of two only, not, however, including the bud. It is not, indeed, asserted that this is constantly the case. The Lily bulb differs from that of the Hyacinth surprisingly, in the evolution of its component parts; in the former the leaves are already formed in autumn, and stand on the part of the axis which in the next year is terminated by the flower-stem, while in the Hyacinth the leaves are first developed in spring, at the same time with the peduncles.

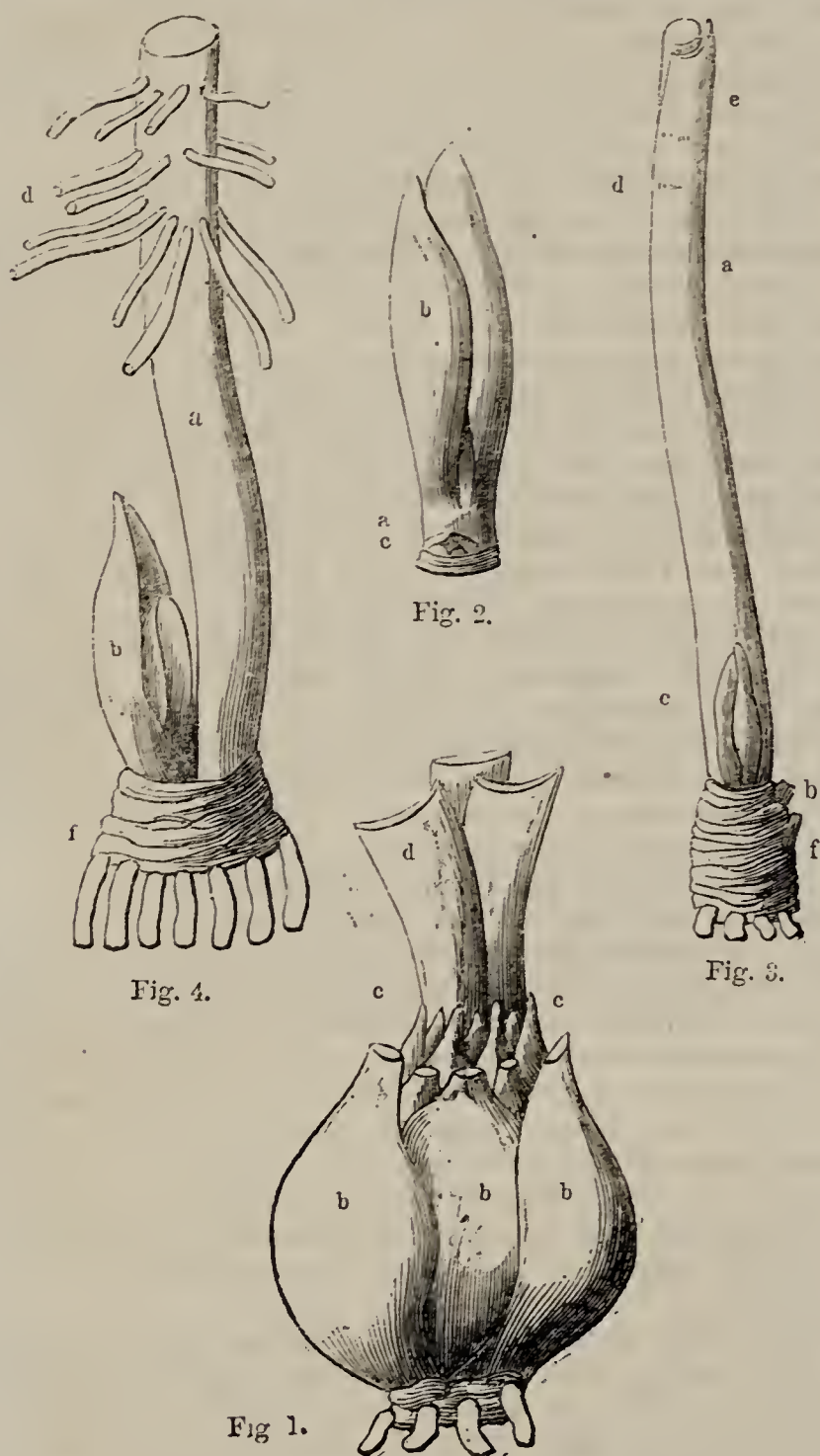
The branched roots break forth from the lower and older part of the basal axis.

The bulbs of *L. Martagon* and *bulbiferum* agree, on the whole, with one another; the scales of the first are smaller and longer than in the last, and, therefore, the whole bulb assumes a more slender form in one than in the other. Both are distinguished from *L. candidum*, by the circumstance that merely scales are found on their rather long main axis, and no leaves.

In moderately-sized bulbs of *L. Martagon* there are about fifty scales, of which the outermost are dry and membranaceous, though not changed, as in the Tulip, into a brown skin, but still yellow. The remains, or at least the scars, of these earlier flower-stems (Fig. 3, f, f) are visible, so that at the time of flowering the productions of at least four years are united on the main axis; frequently, however, there are traces of four or even of five peduncles. In wild specimens of *L. bulbiferum*, only one or two old flower-stems appear. The principal bud is seated in the axil of the uppermost scales (Fig. 4, b). Accessory buds are also found in the axils of the lower scales; one of these frequently blossoms in the next year, together with the main bud. The peduncle of such a bulb, with respect to its axis, is terminal, as well as that of the primary bulb, and has many scales on its own basal axis, and a primary bud in the axil of the uppermost scale. The two bulbs bear each their own magazine, but are nourished in common by the roots of the main axis, till this dies up to the place where the lower bulb is seated, and then both become separate. The roots arise tolerably high on the main axis, often close to this year's peduncle, nestling sometimes amongst their parenchym.

From the lower part of the stem, whether it prove fertile or sterile, beneath the first membranaceous leaf, numerous roots (Fig. 4, d) spring forth in a spiral line of one or more volutions, so that the roots spring from two separate points—the peduncle and from the lower part of the basal axis. There are, however, no roots on the stem of *L. candidum*.

Young bulbs of *L. Martagon* and *bulbiferum* have only one leaf in addition to the scale on their basal axis, from which no



Lilium candidum, Martagon, and bulbiferum.

LILIUM CANDIDUM.

Fig. 1. A rather weak bulb in October, from which only the outer decayed portions have been removed.

b. blunt scarred scales at the base of bulb.
c. small pointed scales above them.

d. leaves.

Fig. 2. Young peduncle and bud from fig. 1.

a. peduncle.
b. leaves on do.
c. principal bud.

LILIUM MARTAGON.

Fig. 3. a. peduncle.
c. principal bud.
d. first traces of roots.

e. base of first leaf of peduncle.
f, f. scars or remains of old peduncles.

LILIUM BULBIFERUM.

Fig. 4. a. peduncle.
b. uppermost scale, with bud in its axil.

d. roots on peduncle.
f. scar of old peduncle.

withered stump of the peduncle of the past summer. These scales are succeeded by numerous perfectly fresh-pointed

stem arises furnished with internodes. The primary bud is terminal, accessory buds being extremely rare, and is surrounded by the somewhat enlarged base of the leaf.

The little bulbs in the axils of the stem-leaves in *L. bulbiferum* are formed of scales closely arranged one over the other.

Colchicum autumnale, L.

Our examination of this plant applies to its condition at the time of flowering, which takes place from the middle of August to October.

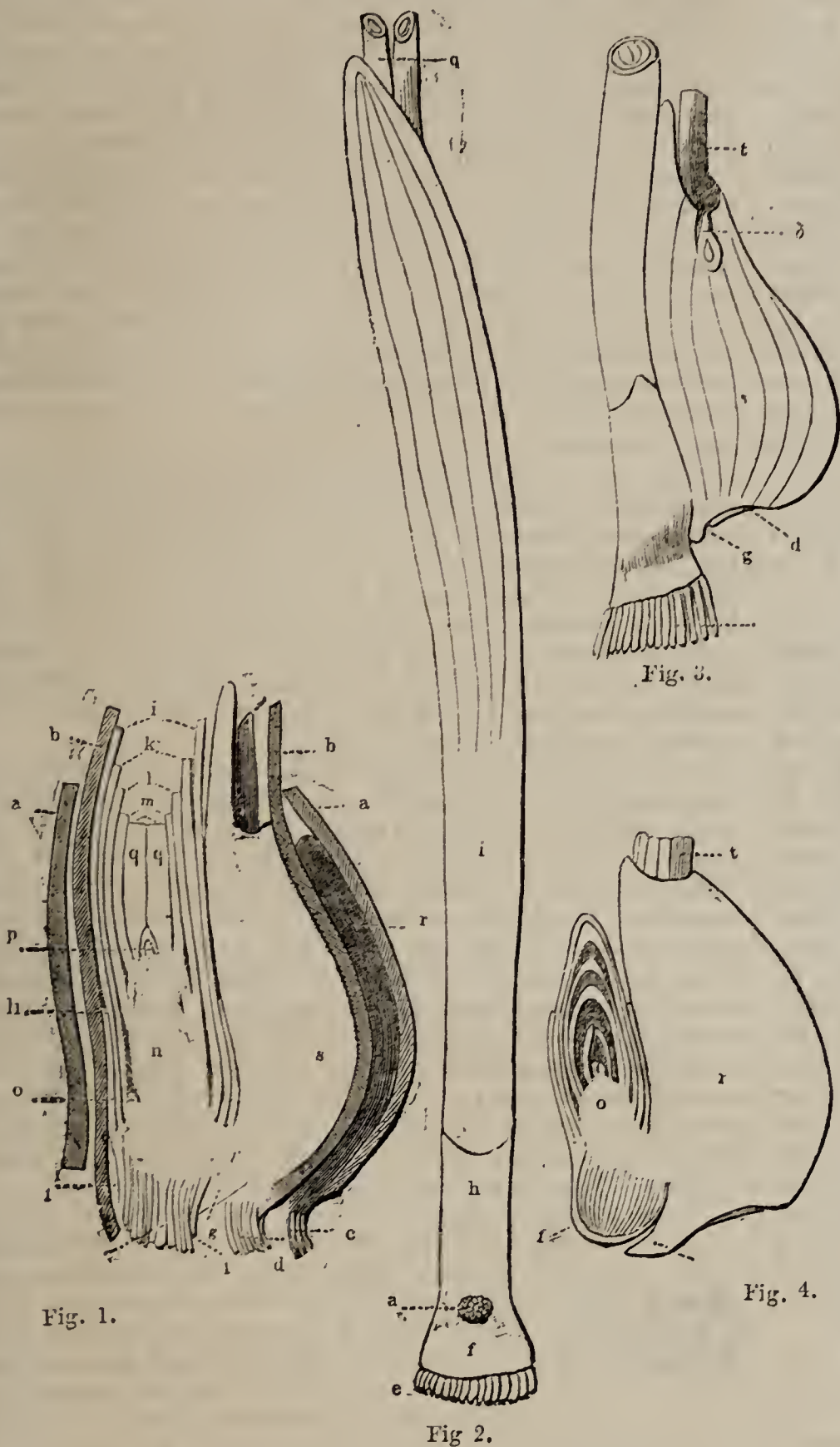
The flowering plant is connected at its base by a small round spot (Fig. 2, a) with the corm. The filiform simple and smooth roots forming a close fascicle, and by no means disposed, as in most bulbs, in the periphery of a circle while the area is free, burst through a short thin fugacious membrane which surrounds the base of the flowering plant. Scattered roots also arise externally from between the old dead organs.

The foliaceous appendages are as follows:—

1. A thin delicate, and consequently, fugacious sheath, scarce half an inch long (h). This surrounds entirely the base of the inner leaves.

2. A second white sheath (i), often four or five inches long, projects beyond this. Between its point of attachment and that of the outer sheath, the axis is undeveloped. It is turned with its back to the bulb, and presents a proportionally narrow tube. The fissure in its upper margin is not deep; it is rather thick, and the cuticle of its inner and upper surface easily peels off, so that on a superficial examination it is easy to imagine that there are two superincumbent membranes. From its orifice the blossoms (q) protrude, sometimes singly, sometimes two, three, or four. If this sheath be opened we find that its lower portion encloses (3) the still undeveloped leaves. Between the second sheath and the outermost or lowest leaf, the axis is undeveloped. The leaf alternates with the above-mentioned sheath, and has its back turned away from the bulb. It encloses the inner leaves and the lower part of the narrow tube of the corolla, with its somewhat involute lamina; at its base it forms a short tubular sheath. If this be removed neatly at its point of attachment, we perceive that between it and the second leaf there is an internode one to two lines high, and proportionately thick (Fig. 1, n). On the side of this portion of the axis, which is clothed with a shining cuticle, near the medial nerve of the first leaf, yet not close above its line of attachment, but somewhat higher, a very compressed bud, swollen below but drawn out above into a bluntish point, is seated in a shallow depression (o). Above this axillary bud there projects slightly a small still, rudimentary, swollen border, formed by the internode, from which the bud springs beneath the line of attachment of the second leaf.

This second leaf alternates slightly with the first, the angle of divergence being from 140° to 150° . On the first glance, one fancies that this second leaf has as well developed a sheath as the first, since the fissure formed by the lateral margins does not run down to its line of attachment, the annular upper margin of the first visible internode. If, however, we try to tear it off from the axis at the point where the sheath seems to commence, the attempt does not succeed, because the leaf below the above-mentioned fissure is united with the axis. This union does not, however, extend for a small distance only. If we examine the dorsal portion of the second leaf, we find that its medial nerve runs down to the swollen upper margin of the first internode; far deeper, that is, than the fissure formed by the margins of the leaf, and that when it ceases, the back of the leaf is slightly distended. Now, if the leaf is split down the medial nerve to the point of distension, we find that this is caused by a little bud (Fig. 3, δ), which is seated in the axil of the second leaf. Under the nerve there is a small narrow canal, since at this point the inner surface of the leaf is not united with the subjacent stem which is clothed with a shining cuticle. This canal calls to mind a similar structure in *Gagea pratensis*, and the bud which is found at the base



COLCHICUM AUTUMNALE.

Fig. 1. Imaginary section of a full-grown plant.

- a, b. outer dead skins.
- c. dead roots of two-year-old corm.
- d. ditto of last year's corm.
- e. roots of present year.
- f. their common sheath.
- g. basal appendage of old corm.
- h. basal sheath of young plant.
- i. second sheath.
- k, l, m. successive leaves.
- n. internode between first and second leaves.
- o. primary bud.
- p. termination of axis.
- q. peduncles.
- r. remains of two-year-old corm.
- s. ditto of last year's corm.

Fig. 2. Young plant, with the envelopes and old corm removed.

- a. point of attachment with old corm.

- e. roots.
- f. their common sheath.
- h. sheathing leaf.
- i. second sheath.
- q. peduncle,

Fig. 3. Young plant still connected with last year's corm, the envelopes having been removed.

- d. scar of old roots.
- g. basal appendage of old corm.
- s. old corm.
- t. dead upper portion of last year's axis.
- δ . second bud.

Fig. 4. Section of old corm and swelling bud.

- g. basal appendage.
- n. old corm.
- t. dead upper portion of axis.
- f. membrane enclosing young roots.
- o. common axis.

of the canal is imprisoned in an organically closed space, but a free communication is left above with the outer air. The bud is constructed like that in the axil of the first leaf, and behind it the axil is somewhat swollen, and forms a little oval cushion (Fig. 3, δ), on or in front of which the bud rests. This cushion answers to the swelling of the axis between the first and second leaf.

In the axil of the third leaf there is occasionally, though rarely, a third bud, formed exactly as the second, on a still smaller cushion, and in a much shorter canal: far more frequently there is in the axil of this third leaf (in which case there is no canal) the lowest and first expanding flower, which is borne by a short but rather strong peduncle. The same is the case with the fourth, fifth, and sixth leaves. More than four blossoms are rarely present, and frequently only one. Each blossom stands in the axil of a leaf. The internodes between the leaves in whose axils the blossoms are seated are very short. The leaves below the uppermost flower are often contracted into short scales. The axis is stunted above the highest blossom, and is here frequently covered with small leaves and little blossoms (Fig. 1, p). Barren plants agree in essentials with those which flower, except that about two leaves only are in general present, and that the axis ceases above the second. After the parts which appeared above the ground in autumn have withered, no remarkable change takes place in those vegetative organs with which we are concerned. In spring the parts of the axis and leaves are gradually extended.

Towards the end of May, when the fruit appears above ground, the leaves having already come forth in the beginning of April, the corm of the previous year is quite wrinkled, though still rather tough. In the young sterile plant the second tall sheath (i) is already withered above, and only a small portion remains below, above the lowest leaf, in the form of a thin brown skin;—the outer and shorter (h), as well as the sheath (f), which at first enclosed the roots, had already decayed just after flowering. This sheath has, however, no part in the formation of the brown coats. The lowest leaf (k) covers with its sheath, which is greatly elongated (from four to ten inches), all the inner parts. The lowest developed internode (Fig. 1, n) is much elongated and thickened, and has assumed the size which is attained in large, full-grown corms in autumn. The portion of this internode (Fig. 1, g), between the point of insertion of the first leaf and the little bud, is also somewhat elongated, and, since descending obliquely it pushes forward beneath the bud, it forms the part which is called by some authors the lateral appendage. The upper margin protrudes as a strong raised border, since the internode is not remarkably thickened above the point of insertion of the second leaf. The border rises obliquely in front, towards the medial nerve of the first leaf, and forms there, above the young bud, a blunt projecting point. The young bud (o) is at present dormant.

The internode between the second and third leaf is often elongated to the extent of from two to three inches, as also the canal beneath the medial nerve of the second leaf. The bud at the base of the canal is unaltered, but the cushion behind it is thickened, though not so much as the lower internode, and forms a little rather obscure lateral appendage. The bud which is sometimes found in the axil of the third leaf is generally abortive. The other internodes between the leaves in whose axils the fruit is seated remain very short.

When the fruit is ripe the following parts die off;—the whole axis with its leaves down to the internode between the first and second leaf which forms the corm; of the internodes between the second and third leaves, there remains only the part behind the bud which formed the cushion, which gives rise to an appendage, one line broad and three lines long, in a hollow on the swollen margin of the new corm. The roots also die off; the long tall sheath of the lowest leaf, whose lamina is soon withered, changes into a brown, rather thick and coriaceous membrane, which involves the whole plant. The cuticle on the inner side of this sheath adheres generally so firmly to the new corm, that when the sheath is removed, it remains attached to the corm in the form of a thick brown membrane.

The new corm attains its full size in the course of the summer, and compresses that of the former autumn, whose contents are completely exhausted, and whose cuticle changes

into a very delicate membrane, which easily shells off, but which resists a long time complete decomposition, as is also the case with the brown sheath attached to it. The bud in the axil of the lower leaf, after being so long dormant, increases rather rapidly. The roots arising from the base of the axis at first enclosed in a thin membrane, whose point of insertion is only separated by a very narrow line from that of the first sheath (h), break forth, rupturing the membrane which is still present when the plant flowers, as well as the base of the sheath of the lowest leaf of the last year's plant, and the top of the second longer sheath (i) projects from the outermost sheath, which has hitherto enclosed the whole bud, from which at a later period the blossoms also protrude.

The bud in the axil of the second leaf is frequently abortive, or developed only at a much later period. Frequently, however, it is developed at the same time with that in the axil of the lower leaf, without, however, producing flowers. After the destruction of the corm on whose margin it is seated, it loses all organic connection with the plant which was developed at the base of the corm from the bud in the axil of the lowest leaf, and becomes perfectly free. The time of each phenomenon cannot be exactly marked, as it is subject to great variation.

When we examine, then, the plant in autumn, we have parts belonging to at least three different years; first, the flowering plant; then the fleshy corm which produced the flowers in the previous year, the dry brown envelope and a bunch of dead roots; and, lastly, the bud which is to produce the blossoms the next year. Very frequently, however, the remains of earlier corms and their investing coats are present. Three such coats may sometimes be counted, investing one another; the older being outermost, and the youngest immediately enclosing the new corm.

Since the number of leaves which precede the formation of the primary bud is always the same, the bud being constantly in the axil of the third leafy appendage (or first leaf), and the position of these appendages is constant, it follows that the addition of each new annual period in one and the same plant has always the same direction. It is clear, then, that the addition of new parts in the plants which spring from the bud in the axil of the second leaf must be in a different direction from that of the primary bud. It appears, however, that no remarkable change of place is combined with this arrangement; from the fact that the brown coats envelop the produce of several years, having a narrow passage only, through which the blossoms of one cycle, which is often three or four years later than that to which the outer coat belongs, protrude without any marked direction from a straight line.

The circumstance that I have uniformly spoken of a corm and not of a bulb requires no explanation, since it is a portion of the axis, and no part of the leaves which assumes the office of storing up the nutriment for the new plant.

In conclusion, I must draw attention to a deviation from the usual position of the leaves which I do not quite understand. The second sheath in the young plant stands with its back to the corm or axis of the last year's plant. What then is the position of the first or shorter sheath with respect to this second sheath? It seems, judging from their earliest condition, as if it also stood with its back to the axis of the last year's plant. In this case the second sheath must stand before the first, and not alternating with it; if, however, we assume that the first stands on the side of the young plant, which is turned away from last year's axis, it maintains its position before the leaf from whose axil the young plant springs. Both cases must be considered as abnormal, but the latter more so than the first.

(To be continued.)

VORACITY OF THE PIKE.—A friend of mine, who resides by the river Weaver, near this town, was walking on its banks one day a short time back, and espied a fine pike, weighing, according to his estimation, from 5 lbs. to 6 lbs., dead, having in its throat a large vole, or water-rat, also dead. It appeared that the pike had seized the vole as prey, but was unable, probably owing to the violent struggles of the animal, to swallow it, and the death of both vole and pike ensued in consequence.—T. BURGESS, *Nantwich*.

QUERIES AND ANSWERS.

CONVERTING A GREENHOUSE INTO A VINERY.

"In requesting your advice regarding alterations to be made on converting a greenhouse into a vinery, I shall endeavour to describe the present arrangements so as to enable you to say what I should do under the circumstances.

"The house is a lean-to, measuring twenty feet by twelve, inside measurement. It is ventilated by three air-boards in the front brickwork, and the same number in the highest part of the back wall, under the glass. There is a front stage about two feet broad, a three feet passage, and then the stage rises up in the usual way. The pipes for heating are under the front stage, the one over the other.

"Now, what I more particularly require is your advice how to form the border for the Vines, and cause the least possible alterations in the present arrangements. I can remove the roadway back from the house to the extent of six to seven feet. Must the pipes be removed from their present position? The bottom of the border, if outside, will be quite dry and hard, and is on an incline."—R. W.

[We could have decided better if you had stated the height of your front wall to the glass, and how much the ground outside naturally slopes. In all other respects your obvious plan of operations can scarcely be more simple. We would leave everything exactly as it is in the internal arrangements, as respects heating pipes, &c. If the bottom of the border should be dry and hard, and the soil good, you will most likely want very little doing in the way of border making, farther than adding a little lime rubbish, broken bones, and old manure. As you speak, however, of having the border where a roadway is at present,—if you must bring soil in, it would be best to have it of fresh brown loam, such as you may obtain from the sides of most highways. The best thing to mix with it is old lime rubbish, some bones, broken small, and a little leaf mould, when the Vines are first planted. You can add nourishment afterwards, by surface dressing. Be sure you can secure dryness at bottom; if not, drain. Be sure, also, that the subsoil is of a healthy nature; if not, concrete the bottom, to prevent the roots getting down. Once more, be sure you do not sink your border by making a deep hole for your compost. Prefer rather to make the most of it above the present ground level, and the more, in moderation, the surface of the border slopes to the south the better it will be. Let the stems of the Vines be taken into the house, *below* (or, if at all likely that it would be desirable to move them out at any time, *above*) the wall plate; and if any part of the Vine stem is against the wall outside, cover it by placing three sides of a small square box against it, stuffing it with sawdust, or charcoal, and placing a sloping lid over it, to keep out the wet. Thus protected, the Vine will suffer from no alternations of temperature. Two feet will be a good medium depth of compost. We have had fine Vines with much less depth.]

KEEPING PLANTS IN UNHEATED GREENHOUSES AND GLASS COVERED EARTH, OR TURF, PITS.

"I am a young gardener, and my master and mistress, being very fond of flowers, expect to see a large supply at all possible seasons of the year. I have no artificial heat whatever; but there is a large lean-to glass-house, with a southern aspect, and some cold pits, made of glazed frames, with turf walls. I have a beautiful stock of late seedling Cinerarias, Calceolarias, Carnations, and Picotees. I wish to know whether I shall be able to keep these through the winter, in this climate, without aid from fire. Into the glass-house and cold pits I shall have to remove the bedding-plants and tender Roses; something, therefore, must occupy the worst places. Pray tell me what plants I may make sure of saving under such shelter as I have; and the rest I must allow to take their chance.

"I see that 'PETER,' in THE COTTAGE GARDENER, seems in about the same condition as myself; but I wish to know more decidedly which of the plants I have named will best bear the outside place."—GEO. MCCALL, *Lockmabea, N.B.*

[We give your master and mistress full credit for their

love of flowers, and you every commendation for your desire to supply them plentifully at all seasons; but it would only lead to disappointment, were we to show that you could do this in the winter and spring months when you have "no artificial heat whatever, and only a large glass-house, with a southern aspect, and some cold pits, made of glazed frames and turf walls." Such a greenhouse would be of little use in winter, unless for preserving your tender Roses, Picotees, and Carnations, and such plants as Wallflowers, Polyanthus, Auriculas, &c., you wished to bloom early; and even these, as well as all your bedding plants and seedling Cinerarias, and Calceolarias, we should prefer wintering in the turf pits, just because you could easily use protection over the glass to any extent; and if the turf walls are at all dry, such pits will keep out more frost than one built of bricks. In your greenhouse, with its fine southern exposure, the plants will be excited into growth in fine weather, only to be destroyed whenever the frost is at all severe. Of course, this would be obviated if you could cover it thickly on the outside; or if, as was shown in an early volume, the plants were so placed that they could be covered with a thick, warm tarpauling, or woollen covering, inside the house. Without such means of defence, the turf pits would constitute the best hybernatory for everything at all tender. But with such a love of flowers in all parties, employers and employed, and the getting glazed sashes for the turf pits, surely it would be wise economy to get a common stove, as used in shops in winter,—a brick Arnott's stove, which would be better; a small flue better still; or one of Thompson's small retort boilers, which, unless the house was very large, would not cost much above £5 or £6, for boiler, furnace, pipes, &c., suitable merely to keep out the frost. Then you would be safe in all weathers, with merely common care, and you might have your Cinerarias, Primulas, and many other things in bloom all the winter. In fact, merely in an economical point of view, if you bloomed little in such a house in winter, but merely kept the plants at the point of safety, you would, by means of such fire-heat when necessary, and keeping your bedding plants in a small state in winter, save a vast deal of labour and trouble in covering earth pits, and keeping the plants in them from damp. The expense of some simple heating medium, and the expense for fuel, which for such a place would be trifling, would be found in a year or two to be sound economical saving. We use turf and earth pits largely; but we prefer cramming houses that may be heated in winter, and thinning out the hardier plants first into these pits, in February and March and onwards. Of course, Roses and Carnations and such plants will keep in such pits admirably all the winter; but if tender things can be made safe in houses, such pits may be made useful in many ways for helping the kitchen in winter.]

CLOTHING THE BACK WALL OF A GLAZED CORRIDOR.

"You were kind enough to advise me, last year, about a narrow greenhouse, or corridor, I have erected. It is built of stone, seven feet high in front, twelve feet at the back, and about seven feet wide; glazed at the top with large sheets of Hartley's glass, and to the ground in front with crown glass. At your suggestion, Vines have been planted in a border under the walk in front, and Camellias in a narrow bed at the back, to train against the wall under the windows of the house. There is, however, a considerable space above the windows which looks bare, and which I am desirous of covering with some good evergreens that may suit the place. At present I have no artificial heat; but I have made provision for this, if I should like it. Will you kindly let me know the three or four plants that would best suit my present requirements."—TYRO.

[As you have Vines up the front glass and along the roof, and Camellias planted at the base of the back wall, we would, so far as the ultimate success of these Camellias are concerned, be inclined to persuade you to put little on the wall above them. Whatever is put there will be apt to interfere with their well-being. As you have no heat, two strong plants of *Passiflora caerulea*, in tubs, or large pots, or planted in little stone or brick divisions,—so that the roots do not get among the roots of the Camellias,—trained to single stems, until

considerably above the height of the Camellias, would soon cover the space. As a sweet-scented plant, the white *Mandevilla suaveolens* might be chosen. To cover very quickly, the *Cobæa scandens* would also do, if well cut in. Whatever is used must not be allowed to overhang, or unduly shade, the Camellias. The white *Banksia* Rose would do well, and the scent would be delightful; but it would do best if you did not introduce much heat. As was said at first, if anything is used, keep it thin, and close to the wall, or the Camellias will suffer.]

GREENHOUSE BLACK HAMBURGH GRAPES CRACKING.

"I have twelve *Black Hamburg* Vines, the berries of which are now colouring, and cracking I am sorry to say. Can you tell me the reason of the cracking, and whether it can be prevented?"

"Can you also oblige me with any remedy for the *thrips*?"
—A TWO-YEARS' SUBSCRIBER.

[Many of us will be rather disappointed in the size of the berry of late Grapes, such as are grown in greenhouses this season, as the excessive heat in June, and some part of July, caused the berries to colour prematurely. Plenty of water at the root, abundance of air, and a slight shading would have prevented that premature colouring, and secured greater size of berry. Excess of moisture at the roots, and a hot dry atmosphere in the house, would tend to make the berries crack. A close, damp, moist atmosphere, syringing, and shutting up rather early, and a rather dry state of the roots, would also cause this misfortune to take place. An airy, dryish, atmosphere, is the best remedy for preventing it; but if the roots are at all moist, this dryness in the atmosphere must not be carried to excess. Neither must the roots be dry, if the berries are swelling freely. The want of reciprocal action between root and bunches is the chief cause. We have had the *Chasselas Mosque* Grape, or *Josling's St. Albans*, much cracked in a house where a fair amount of moisture was used for watering plants, &c. In a house kept dry, and a fair amount of moisture in the border, and an excess guarded against by putting a few sashes over the border, to keep away heavy rains, we have had nice bunches without a cracked berry. For your *Hamburgs*, secure moderate moisture at the roots, and give abundance of air. The berries will not be so large, but they will be sound. Swell the berries out with more moisture at the roots, and a moister, closer atmosphere, and, in all probability, the cracking, and consequent moulding, and decaying, will continue.

Thrips.—You will lately find much about destroying and keeping down thrips. The remedy must greatly depend on the nature of the plant affected. If your cracking and coloured Grapes are affected, we would recommend two or three good tobacco-smokings at night. The second smoking to be of two or three days interval from the first, and so on. For small plants we would use Laurel and size water.]

BRUGMANSIA ARBOREA TO BLOOM—PAMPAS GRASS.

"Having two plants of this fine greenhouse shrub, I am anxious to get them to flower, and shall be obliged for instructions, to obtain this gratification. One plant has two branches, the other a single stem, and both are growing freely. I wish to know if the tops of the branches should be stopped, to force lateral shoots for flowering? I have also a fine plant of *Brugmansia Knightii*, whose shoots, of this season, are just showing flower-buds, so different from old *arborea*.

"*Pampas Grass*.—I have a fine plant which is throwing up several jointed stalks, and wish to know how many may be left for flowering in perfection; and, if any should be cut out, how long should the shoot cut out be left from the root?"—M. F.

[In late numbers, you will find everything stated with respect to the flowering of these fine, soft-wooded shrubs. They do not bloom freely until two or three years old. We would recommend treating your two plants differently, though

you should have been more explicit as to stating height, or length of shoot, and girth of ditto, &c. Imagining that they are pretty strong, and keeping in view that they bloom on the wood of the current year, we would encourage the shoots, on the plant having two shoots, to grow freely, and then, if the plant is old enough, and these shoots have come from wood tolerably well ripened, they will begin to show blossom-buds from the points. With respect to the plant with one shoot, if your object is flowers, treat it the same. If, however, you would sacrifice early blooming, to a well-formed plant, and late blooming, train the single stem until it is from five to six, or more, feet in height, then nip out its point. When that is done early, side-shoots will break from buds on the stem. Take away all, with the exception of four, or six, near the top, and allow them to grow freely, and, most probably, these will bloom in September or October. If you cannot thus stop such a shoot early, say in July or earlier, because not high enough to form a good head, then it would be as well to let it grow on until autumn, and either stop it then, or in the spring. At any rate, when growth commences in spring, rub off all the buds along the stem, with the exception of some half a dozen or so, to form the future standard head of the tree. These branches should be encouraged to grow freely, by giving rich compost and plenty of manure watering; and, most likely, next season they will produce their large sweet flowers in abundance. In winter, the plants should be kept from frost, just moist enough to prevent shrivelling; and the sooner fresh growth is encouraged in spring, the sooner, other things being equal, will the bloom be produced. When once a plant is thus formed, the head should be cut in every season, keeping in view that the bloom is most abundantly produced from strong shoots of the current year, instead of from more numerous and weaker shoots. Get such strong shoots to start from spurs, or shoots well ripened the previous autumn, and abundance of flowers is certain. Let your plants be stored away at the end of autumn, in some darkish place for the winter, with the shoots of the season, yet green, soft, and succulent; and we should not like to be at all sanguine on the number of flowers produced the following summer. We know of some fine plants of *arborea*, and also of *atrosanguinea* and *lutea*, that are planted out in light, but cool conservatories; and these plants, from the abundance of heat and light in summer, the cutting well back in spring, and keeping rather dry for a few months in winter, are literally loaded every year with blossoms.

Pampas Grass Thinning.—As your fine plant is throwing up several jointed stalks merely, and not a great number, we would let them all remain, and encourage with a fair supply of water in this hot, dry weather. In large stools it would be desirable to thin out the smaller stems, but not on a small plant having only several stems. We have two strong plants, but have been disappointed, as no doubt they are male plants, the bloom-spikes of which are much smaller than the female, and of a dull brownish colour. We saw the female flowers at the *Poles*, near Ware, last autumn, and for their elegant, silvery appearance, they well deserved the title of *argenteum*. We are not aware there is any mode of distinguishing the male and female plants until they actually bloom.]

ROSES FOR STANDARDS.

"Is there any objection to the following Roses?—robust-growing and well-shaped Roses being the chief qualities desired:—

"BOURBONS.—*Acidalie* (standard), *Réveil* (pillar Rose), *Edouard des Fosses* (third-rate Pillar Rose), *Souchet* (best on its own roots), *Minoux* (standard), *Queen of Bourbons* (standard).

"HYBRID PERPETUALS.—*Standard of Marengo*, *Paul Desprez* (best on its own roots), *Jules Margottin* (would make a splendid pillar), *Madame Cambecères* (very strong pillar Rose), *Madame Guinoisseau* (pillar), *Cornet* (pillar), *Caroline de Sansal* (strong standard).

"Will you kindly give me your opinion as to which are best for standards, or dwarf standards, and which for growing on their own roots? and any other suggestions which may appear to you desirable for one who is rather a novice at Rose-growing, and to whom a bad-shaped Rose is a terrible eyesore?"

Perhaps you can name better-shaped Roses than the above, and equally strong growers."—A SUBSCRIBER, *Lewisham*.

[Except *Souchet*, all your Roses should be tall standards, and not pruned close; or if you had them worked quite low, and grew them as bush pyramids, or low pillar Roses, from five to ten feet high, they would answer better. Your Roses are good, but the shape of a Rose does not altogether depend on the kind so much as on the culture. *Jules Margottin*, your best hybrid perpetual, we have seen a poor one-sided flower from bad culture; and *Souchet*, your best-coloured and best-shaped *Bourbon*, we have seen in "buttons," not worth looking at, from being on a strong high stock. *Souchet* should not be worked more than a few inches above the soil, and is best as a pot Rose on its own roots.]

WEEDY LAWN—PREVENTION OF CLUBBING.

"I shall be obliged by your saying how I can get rid of the enclosed weed, which is overrunning my lawn. The lawn is of a mossy character, which I wish to retain, but this insidious stuff spreads so rapidly, that I fear it will entirely destroy the moss, and compel me to relay it.

"What do you recommend to prevent all green vegetables from clubbing, the soil being of a loamy character?

"You have repeatedly given instructions for growing Mushrooms, which I have endeavoured to follow, but cannot succeed in producing any until about June, although prepared in October and November.

"Why do Gloxinias and Geraniums all go off without flowering, and the leaves become completely black?

"I have tried, four years in succession, to produce the *Ranunculus*, getting the seed from various places. It invariably fails; why is it?

I am also very unfortunate with Violets, having plenty, but producing no flower. I have several gardeners; the head man apparently knows his business, but does not satisfactorily explain his repeated failures. Some of my *Tom Thumbs* are only just showing flowers. Where is the fault?"—A VERY OLD SUBSCRIBER IN SURREY.

[Your lawn has a very dry bottom, and, probably, is on the chalk formation. It must also be well suited for finer grasses, and the most velvety moss, and liable to scorching in hot weather. Under such conditions only does the "insidious stuff spread so rapidly." It is one of the prettiest of our Alpine flora, the Mouse-ear Hawkweed, *Hieracium pilocella*. When we undertook the defence of mossy lawns, against the vandalism of Dr. Lindley, and his poisonous pills and purgings, to get rid of moss for ever, your "insidious stuff" occupied a large portion of our lawn, on the top of a steep bank; and we could not find it in our heart, hard as it is, to destroy it entirely, or the Daisies either; we only kept both under. The old Daisies we spudded out, and the young ones we scrupulously saved to bloom. It is much more easy to keep the Mouse-ear Hawkweed in proper quantity. The day, or days, before mowing, or mowings, set a boy with an old, short, blunt-toothed, iron rake, and scratch the "stuff" resolutely four ways, from the four points of the compass. That will loosen the "strings," or runners, and raise them on to the surface of the grass, where the scythe, or the machine, will reach them, and sweep them off to destruction, and thousands of the young plants along with them. The last time you scratch them for the season, sow a little White Clover seed over the place. That, and the improved grass, will soon keep down, if not destroy the weed.

The best way to prevent clubbing, is to trench the ground three feet deep, and to plant such plants as are free from the "club." Also, use fresh soot for the seed-beds of all plants that are liable to the club, and, when the plants are taken up for transplanting, let their roots and stems be puddled in soot and water, as an additional security. But thorough good deep trenching will rid the land, for years, of the cause of the club; if you raise your seedlings on that land, you will be rid of the club at once. As late as 1852, we knew an acre of good kitchen garden which would club everything related to the Cabbage tribe. The top spit was as rich as any land we ever saw, and the bottom spit was poor and hungry. Nevertheless, it was taken to the top, and the beggar was put on the top of the gentle-

man, as the men said. But muck-pies and sewage made the top fit for the king of spades, and not a grub, or club, has been seen or heard of since.

We want your receipt for growing Mushrooms in June and July. You have ours for the rest of the year, and if you do as we said, you must succeed; but we seldom have a Midsummer crop of them.

There are fifty reasons why Gloxinias and Geraniums do not flower. We cannot know which of them affects your plants, neither can a stranger know why the seeds did not grow. We seldom lose one seed in a hundred of all the kinds we use: if we could depend on the kinds being true to name, we should never have a complaint.

The reason why the *Tom Thumbs* have not flowered to the middle of July is, that you, or some one, starved them for want of room in the spring of the year, after being badly wintered.

The probability is, that your garden is full of insects, grubs, and all manner of vermin; that all your seedlings have been devoured in the seed-leaf; and that a thorough reformation is wanted all over the place.]

PASSIFLORA AMABILIS TURNING YELLOW.

"I HAVE a young plant of *Passiflora amabilis*, which I kept in a stove all last winter, at a temperature of from 65° to 70°. I gave it a large shift in April. Compost—loam, leaf mould, Heath soil, and sand. It is getting yellow in the leaves, and will not grow. Will you oblige me by letting me know what I had best do with it?"—P. M. K.

[There is no doubt the shift was too large a one, and the drainage too imperfect. Therefore, the soil became too much soddened with water. The compost was right enough. Let it become tolerably dry, and examine it and repot it with attention to good drainage. Then, with steady watchfulness as to watering and temperature, it will flower next May. The plant sent with this is the wild Succory, Chicory, or wild Endive, *Cichorium intybus*.]

SOIL UNFAVOURABLE TO PEAS.

"I HAVE vainly tried, for the last four years, to grow a good crop of Peas in my garden, and am at a loss to account for the failure. The soil is what is called strong; the garden well drained. All kinds of Peas have been tried, but they invariably decay at the root as soon as they come into bloom. Most other vegetables grow well."—J. R.

[Why did you not mention in what part of the United Kingdom you live, and send us a teaspoonful of your soil? Are your neighbours more successful in growing Peas? In the absence of anything to guide our opinion, we can only recommend that abundance of sand and chalk, or lime, be dug into the plot intended to be sown with Peas; that it be thrown up into broad ridges, and the Peas sown on the top of these. Let the rows be watered in dry weather, and liquid manure be given to them once a week.]

SLATE BOXES FOR CUTTINGS.

"How is drainage managed in your cutting boxes with slate bottoms (which I wish to try), as I conclude there are no holes in the slates, and the boxes must be too shallow to allow of any draining materials in the bottom?

"2. Would they answer equally for putting out cuttings, in the late autumn, to pass the winter in, as well as for the early spring, previous to bedding out?

"3. Would they answer to put the scarlet Geranium cuttings (to strike) in at once, late in September, which is my time for putting out my store for next year's bedding out, as I find them answer quite as well as those made earlier in the season? Sometimes I do not put down any till October.

"Last September, or October, I put some down under common cap glasses, in a south border, and did not lose one, I believe; and, when planting out in June, found them much finer than those in the greenhouse, which had been 'potted off' in March in the regular way, from the cutting pans; and

many are at this moment larger and better plants, and better furnished than those more regularly treated. I am rather disposed to put some down in good-sized boxes, in the greenhouse, this autumn, and not to touch them till planting out in May or June. Do you think they will answer? Last year was so mild, it would not answer for a precedent."—JANE.

[Boxes with slate bottoms sometimes drain between the sides and the slate, which do not fit so tight as to hold water all round; and sometimes through holes made in the slate on purpose. No matter how shallow your boxes are. You may have the slate bottoms drilled so that a quill could pass through the holes; the rough parts of the compost for the cuttings will be sufficient for drainage.]

2. Late autumn cuttings of scarlet Geraniums keep better in boxes all the winter than in pots, when one like "JANE" has an eye after them; but some, who let the leaves get too close and damp, lose half their stock before the new year. Have you not read a score of times how we kept 5000 such cuttings, year after year, in one single box, made of turf sides and no bottom to it? but the top of the box was glass; the glass was covered with a single fold of mats, and the mats were covered one foot thick with stubble. This covering was equivalent to your climate; and in all climates, where scarlet Geraniums are safe in winter with a glass cover, the best plan is to "put down" the cuttings, at the very end of September, in shallow, cold pits. Last October we planted 1,300 full grown and rooted Geraniums in one cold pit, in three inches of sand and leaf mould, without fifty leaves on the whole lot. One layer of mats and ferns kept them from the frost. They were early planted out from that bed, and now they are the pride of the garden. But the same frame would hold 3000 or 4000 cuttings, and that is to be the tune this season.

3. All right. That is the way to astonish the natives, and to make sure of winning the game; but there are thousands and tens of thousands who must not speculate on what is a sure game to one like you. Pray just give us a hint about where you put the beauties to bed.]

TERRACE GARDEN IN SUMMER AND SPRING.

"I HAVE a small terrace garden, which, as it lies directly under my windows, I should like to have gay as long as possible. In the summer, the usual bedding-out plants, arranged one colour in a bed, answer admirably; but when I talk of a succession of early and late spring flowers, I am met with the discouraging information—"But your summer plants will never do as well, unless the beds are forked up, and left in the rough all the winter for the frosts to get in; besides being well dressed with manure in the autumn." Now, I have been following your directions, and making cuttings of all the good Pansies, Wallflowers, &c., which, with the help of early and late bulbs, and autumn-sown annuals, I hoped would make my little garden gay from February to June. But how can I plant them and sow the annuals, so that the first may be well rooted before the frost sets in, if these small beds must all be forked up directly the bedding plants are over?

"I daresay this is a very simple matter to the experienced; but I only began gardening this year, and it is a puzzle to me. I should also like to know whether any of the *Oenotheras* would do to plant in the place of yellow *Calceolarias*, which have failed?"—FLY.

[You have been led astray by Job's comforters as far as the poles are asunder. Yours is just the sort of place to be gay all the year round, and to be in bloom from the opening of the first spring flowers till the frost destroys the last *Pompone Chrysanthemums*; and, what is still better, you will be easier to teach than many, who have been at it for years. It is often with us, as at the riding-schools, where they prefer a man who never mounted—no, not so much as a broomstick—to my lord's head-groom, who was taught by the old coachman not to "sit his horse," but to saw his ways, like the top man on a sawpit, or the Lord Mayor on a field day. It is true that all flower-beds should be forked over every time they are emptied, be it autumn, spring, or any of the summer months. If the ground is very poor, and does not give a nice show of flowers, it must be made richer; the most rotten dung is the best. But thousands of acres, of the finest flower

gardens in the world, never get a morsel of dung; when the beds show symptoms of weakness, the top spit is taken off, and wheeled into the shrubberies, or under trees, anywhere out of the way, and the same quantity of fresh compost is put in its stead. Now, fresh compost is the key to good flower gardening, and fresh compost is made up of 500 different things, and different ways, by different people,—everyone taking advantage of collecting what is within his reach or his means; but one thing is common to them all, and that is the muck pie, which every garden in the kingdom furnishes once a year. The rubbish heap is this pie, and, of all things in the world, the contents of the rubbish heap, when thoroughly rotten and well mixed, is the best thing for flowers and bedding plants. It should be mixed near the top for bedding plants, and for all manner of bulbs it should form the bottom, where the roots can reach. Keep this always in mind. Then, after helping off a crop of bulbs, it is in the best condition to be worked back to the very top of the bed; and the first six inches of all flower-beds should be twice or three times richer than lower down,—which is another great secret. One more grand secret is, not to sow a single annual in the autumn where it is to bloom next May. Every one of them will remove in February, or later, and is much improved by the change. The last and best secret is to know that every one of the spring flowers, bulbs and all, may be removed quite safe to another place as soon as they are out of bloom, or as soon as the time comes to put in pot plants. Now, if you look over the last half-dozen volumes of *THE COTTAGE GARDENER*, and read all about "spring flowers," "bulbs," and "bedding plants," till you are master of the general subject, you will have to write again and again for explanations, and more about them, but you will be coming more and more to the point each time; and it is only pastime for us to guide you to the top of the temple of Flora. Meantime, you are too late to put in *Oenotheras*, to make up this season for *Calceolarias* that have failed. Can you get a handful of the dwarf double-yellow Marigold, which will transplant for six weeks after it is full in bloom, without flagging a leaf, and is always ready to be put in anywhere at a moment's notice?]

CINERARIA AND CALCEOLARIA MANAGEMENT.

"On May 9th, I sowed some *Cineraria* seed, according to instructions in 'Florists Flowers for the Many,' and in due time pricked them out in small-sized pots. They are now healthy-looking plants, but seem to be too large for their pots. Shall I do right by moving them into the pots in which I intend them to bloom? I presume I shall not want the cold frame for them till the end of August.

"I have also some *Calceolaria* seed. Must I sow that soon?

"Will you also be kind enough to inform me, if the present time is good for striking *Geraniums* and *Verbenas*? Can I strike them in sand and water? I have tried some *Verbenas* but they have died."—R. WILSON, *Oswestry*.

[Give the *Cinerarias* a good shift at once, and let the soil be holding, and not too rich, else your plants, having done so well, and being so early, may run too much into large succulent leaves, which will not stand the winter half so well as moderate leaves, which are firm in texture. Good holding loam to winter in, and a constant succession of very moderate doses of weak liquid manure from the middle of February, is the grand secret of those who exhibit them for prizes. We never water them in spring without a *little* extra each time; but the extras are very small indeed, it is the constant use of it, rather than the strength, which does the deed. The latter end of August is just one month too soon to shut up young *Cinerarias* which are so forward as yours. Let the glass be on in rainy and blowy weather, but let them have the free open air from early morn to late at night, till the frost will change the tune. You are wrong to bring up *Cinerarias* in that delicate, tender way. They are more hardy than herbaceous *Calceolarias* were before they were ruined by too much indulgence, and they are much hardier than the present representatives of that race.

It is now high time to sow *Calceolaria* seeds, to bloom next May and June. Sow them very thin, and put a piece of glass over the pots, and shade them; but see that the soil is well

watered *before* you sow the seeds, and not after. That is the only secret about them.

As to Verbenas, your best plan is to put as many in pots, by layers, as will furnish cuttings enough in the spring. September is the best time for you to put in your Geranium cuttings; but have them in pots at once, and not too thick, if you must keep them in the same pots till February.]

SCARLET DEFIANCE GERANIUM.

ALLOW me to bring into notice this noble trusser,—we most of us have our favourites,—holding out in glowing language their various good qualities. This is no new variety; nevertheless, it is not grown to that extent to which its qualities entitle it. For duration of blooming none surpass it. I have frequently counted on a single truss between fifty and a hundred expanded and unexpanded blooms, the former larger in circumference than half-a-crown. For a large bed, planted thickly, few equal it. Its habit is not all that can be desired; but, by judicious management in spring, nice bushy plants are easily obtainable, which will retain their compactness all through the season, and repay any one for the little extra care bestowed.—JOHN EDLINGTON, *Winch House, Seacombe, Cheshire.*

—MR. G. FLEMING.—It is with no small degree of pleasure that we are enabled to announce that Mr. Fleming, of Trentham, has been honoured by his Grace the Duke of Sutherland with a substantial mark of his Grace's esteem, by being appointed to the stewardship of all the Trentham estates. Another gardener will be appointed to succeed Mr. Fleming in that capacity; but, at the special desire of the Duke and Duchess, Mr. Fleming has been requested still to take a general supervision of the garden also. Such an announcement cannot fail to be highly pleasing to Mr. Fleming's friends, and to act as a stimulus to all young gardeners who have determined to rise in their profession—*Palmarum qui meruit ferat.*

TO CORRESPONDENTS.

SEEDLING POPPIES (*P. Q. R.*).—They are decidedly the most double we have seen. The petals are white, fringed with carmine, and have the appearance of huge mottled Ranunculuses.

RUSTED GRAPES, &c. (*W. G.*).—Your berry has the Grape rust, but whether it is from the rust disease, or from the berries being roughly handled when they were young, and in a wet or damp state, cannot be made out. The rust disease is a severe infliction, but the rust from incautiously handling at thinning time is merely for this crop, and does no harm to the Vines. We have seen a whole crop disfigured, in the same way as your berry, from "earrotty" hair. The gardener had red hair, and enormous red whiskers. He kept the vinery very damp after the fruit was set, and he was so long on his legs that the Grapes had no chance of escaping his bristles. We can give you no information about the kind of Roses for your wooden fence, not knowing what part of the kingdom you have written from. THE COTTAGE GARDENER reaches places in this kingdom where the Hawthornden Apple will hardly ripen against a south wall, or a *Noisette* Rose open a bud by the side of it. You are too late this year for plants to cut flowers from, after the Chrysanthemums are done, till the forced bulbs come on, unless you can get Camellias that have not been out of doors for the last two years.

GOLDEN CHAIN GERANIUM PROPAGATION.—AZALEA GROWING (*Amateur*).—The best time for an "Amateur," and for all amateurs, to propagate the *Golden Chain* Geranium is in the month of February, and the best compost for the cuttings is equal quantities of sand peat and sifted leaf mould, with a covering of clean sand on the top of the pot, and a good drainage at the bottom. A dry, front shelf, in a propagating-house, is the safest place to root them. But they root as easily as *Tom Thumbs*, only a damp, close, place is apt to damp the leaves. Pot them singly in the same compost as soon as they are well rooted; after hardening them in April, plant out at the usual time, and they will grow as fast and as strong as if they were struck now, or this time last year. The reason for preferring February to strike them is this,—you gain nothing in head room, for the old plants of *Golden Chain*, during the winter, if you take the cuttings in the autumn, and the young plants will not grow any the better for being struck in the autumn. Moreover, the cuttings are quite safe on the old plants all the winter; and they would be quite the reverse, during that period, in any other hands than those of good gardeners. Even with the best gardeners, fresh-rooted *Golden Chains* are merely so many "slips between the cup and the lip" the whole winter. "How to grow Azaleas into good-sized specimens in one season?" is but another way of asking how to find the philosopher's stone. If we knew "how," we would sell all we have, and buy young Azaleas at thirty shillings the dozen, and sell them next year at from one to five guineas a piece. From four to seven years, according to the kind, is the usual time to get up Azaleas for exhibition.

NAMES OF PLANTS (*J. M. D.*).—Your plants are:—1. *Magnolia glauca*. 2. *Magnolia obovata*, often called *M. purpurea*. 3. *Magnolia conspicua*. These are three of the best of the deciduous kinds. (*J. G.*—, *Exeter*).—Your Ferns are as follows:—No. 1 is *Pteris serrulata*. No. 2 is *Pteris Chinensis*, called by some *Pteris erenata*. No. 3 is the *Asplenium viviparum* of some, or *Cænopteris* of Bergius, and *Darea fœniculacea* of Sieber. Most of the nurserymen sell this plant under the name of *Cænopteris viviparum*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 17th. ORMSKIRK. *Secs.*, Wm. Shawe, and James Speneer, Ormskirk.
AUGUST 18th. AIREDALE. *Hon. Secs.*, J. Wilkinson and T. Booth, Shipley.
AUGUST 28th. HALIFAX AND CALDER VALE. *Sec.*, Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.
SEPTEMBER 8th. LIVERPOOL AND MANCHESTER.
SEPTEMBER 14th and 15th. SPARKENHOE (at Tamworth).
SEPTEMBER 21st and 22nd. LICHFIELD.
SEPTEMBER 26th. PAISLEY. Entries close Sept. 18. *Sec.*, Mr. Wm Houston, 14, Barr Street.
OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.
NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.
DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.
JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.
JANUARY 20th and 21st, 1859. LIVERPOOL.
FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. *Secs.* R. Teebay, and H. Oakey.
N.B.—*Secretaries will oblige us by sending early copies of their lists.*

CAUSE OF BAD HATCHING.

PERHAPS the best time to inculcate a maxim is when people are smarting from failure caused by the neglect of it. The receipt of numerous letters, all doleful and complaining; the fact that the Secretaries of Summer Shows have numbers of friends all wishing them success, but expressing their sorrow that they cannot exhibit for lack of chickens, and promising great things for the Winter Exhibitions;—all these move us to steal a paper between the Shows, and to endeavour to find, and to point out, the cause of failure.

We might add another reason for doing so. Pheasant breeders *all* complain that while the wild birds have hatched an average in most places, though in some whole nests of eggs have remained unproductive, yet the eggs of the tame birds set under hens, have everywhere done badly. There must be a cause, and although we have written a dozen papers in the POULTRY CHRONICLE on the subject, yet this year's experience proves to us, either that no attention was paid to them, or that our time was not happily chosen. Our last, if we recollect rightly, was in February. Then all was hope and expectation, but we know that in many instances disappointment has followed.

Now, while failure rankles in the hearts of our friends; while, like Nelly Cook, they "look askew" at Summer Shows for chickens, and while they blame their poultry people, and the poor fowls, for what is termed bad luck, we will endeavour to pour oil on their wounds, and to show them a brighter prospect.

We will set aside all experiments tried with chickens; we will not treat of fowls that have been recently purchased; and we will take a case where the birds have proved their breeding properties in a previous season. All their eggs have been good before; this year all have failed. Many had chickens in them, but they did not come out.

The oracles of the places have been consulted, and have decided on fresh blood. They have recommended to change the cock. Others have seen the realisation and fulfilment of their prophecies, that there has been so much crossing and interbreeding to get birds that would please Judges, that the characters and habits

have been tampered with and changed, and the hens do not sit steadily and well. Then, again, that fowls are so pampered, and have such houses provided for them, and are so interfered with, they cannot be expected to breed well. "Look," says the advocate of the last opinion, "Look at a common barn-door hen, who steals her nest in a hedge, sits on fifteen eggs, and brings out thirteen. She has never been overfed; she is of no fancy breed; she sits in the open air through wind, and rain, and sun; she steals off to feed in the morning." The last is very near the truth.

Fowls are carefully set and tended, and the eggs fail. Pheasants, partridges, and hens that steal their nests, succeed. The shortest plan to arrive at a solution of this difficulty, will be to endeavour to find the causes of success in the latter. First, and not the least important, the latter always *sit on the ground*. Next, they have every advantage in air, so conducive to health, and they are not disturbed. But the most important point is, *they damp their eggs*. Nature has provided this, and all poultry-keepers will do well to imitate it. If there is rain while the hen is on her eggs, she gets wet, and so do the eggs, but it does not spoil them. If there is no rain, there are heavy dews; and birds sitting in a state of nature leave their nest at daybreak to feed. The grass at that time is as "*wet as a river*," the hen in stooping for her food gets her breast saturated, and in that state goes to her eggs. It does not spoil them.

Of late years our springs are seasons of drought, the surface of the earth is dry, and affords no natural food, every place is burnt up, the hens are out of condition, and do not sit well. The eggs are parched, and when the time comes, the chickens cannot escape from the shell, and they perish.

Our recommendation then is, that in dry weather, and in wet, if the sitting hens are in confinement, the eggs should be sprinkled with water every day, while they are off feeding. If this is done, we can, from experience, assure our readers they will have less cause for complaint as to the hatching of their eggs in 1859.

CRYSTAL PALACE POULTRY SHOW.

THIS Exhibition commenced on the 7th inst., and will continue until the 11th. We have only room for the Prize List to-day.

SPANISH.—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, J. Clewes, Walhouse Street, Walsall. Third, Rev. W. G. Holmes, Brookfield, Arundel, Sussex. Fourth, J. R. Rodbard, Aldwick Court. Highly Commended, G. W. Locke, Newport, Isle of Wight; J. R. Rodbard, Aldwick Court, Langford, near Bristol. (A very good class.)

SPANISH COCKS.—First, J. C. Hall, Surrey House, Sheffield. Second, J. R. Rodbard, Aldwick Court. Third, W. Moore, Hanley Castle, Upton-upon-Severn. Highly Commended, J. R. Rodbard, Aldwick Court. Commended, W. Moore, Hanley Castle; R. Wright, 2, Porters Place, Holloway.

DORKINGS (Coloured).—First, Hon. W. W. Vernon, Wolseley Hall, Rugeley, Staffordshire. Second, H. Lewry, Rose Cottage. Third, C. H. Wakefield, Malvern Wells. Fourth, G. Chadwin, Tollard Royal, Salisbury. Highly Commended, J. Frost, Parham, near Wickham Market, Suffolk; W. Moore, Hanley Castle, Upton-upon-Severn; C. Revett, Parham, near Wickham Market. Commended, Captain W. Hornby, R.N., Knowsley Cottage, Preseot; C. C. Elgar, Reigate; J. Frost, Parham; H. Lewry, Rose Cottage, Staplefield, Crawley, Sussex.

DORKINGS (White).—First, J. Robinson, Vale House. Second, Captain Beardmore, Uplands. Highly Commended, Captain Beardmore, Uplands, near Fareham, Hants; J. K. Fowler, Prebendal Farm, Aylesbury; H. Lingwood, Needham Market. (No class shows greater improvement than this.)

DORKING COCKS (Coloured and White).—First, H. Lewry, Rose Cottage, Staplefield. Second and Third, Hon. W. W. Vernon, Wolseley Hall. Highly Commended, Hon. W. W. Vernon, Wolseley Hall. Commended, S. Lewry, Ashington Common.

COCHIN-CHINA (Cinnamon and Buff).—First, T. Stretch, Marsh Lane, Bootle, Liverpool. Second, G. Johnson, West Street, Fareham. Third, J. K. Fowler, Prebendal Farm, Aylesbury. Highly Commended, Mrs. H. Fookes, Whitechurch, Blandford, Dorset; Miss A. Watkin, Freedom Cottage, Walkley. Commended, T. Cartwright, Croydon. (An excellent class.)

COCHIN-CHINA (Brown and Partridge-feathered).—First and Third,

J. K. Fowler, Prebendal Farm. Second, J. L. Harrison, Foxholes, near Lancaster. Highly Commended, G. C. Adkins, West House, Edgbaston; B. J. Ford, Ide, near Exeter. Commended, T. Stretch, Marsh Lane, Bootle; H. Tomlinson, Balsall Heath Road. (One of the best classes ever exhibited.)

COCHIN-CHINA (White).—First, R. Chase, Moseley Road, Birmingham. Second, J. K. Fowler, Prebendal Farm.

COCHIN-CHINA COCKS (Coloured and White).—First, Miss W. Musgrove. Second, Mrs. E. Herbert, Powick.

BRAHMA POOTRA.—First, G. Botham, Wexham Court, Slough. Second, J. K. Fowler, Prebendal Farm. Highly Commended, G. Botham, Wexham Court. Commended, J. K. Fowler, Prebendal Farm. (A class of beautiful birds.)

BRAHMA POOTRA COCKS.—Prize, J. K. Fowler, Prebendal Farm.

GAME (White and Piles).—First and Second, H. W. W. Vernon, Wolseley Hall. Third, S. Matthew, Chilton Hall, Stowmarket.

GAME (Black-breasted and other Reds).—First and Second, G. W. Moss, The Beach, Aigburth, near Liverpool. Third, W. Bentley, Scholes. Highly Commended, A. Foster, North Petherton, near Bridgewater; J. Lamb, Highworth. Commended, Rev. G. S. Cruwys, Crnwys Morehard Court; W. Cox, Brailsford Hall, Derby.

GAME (Blacks and Brassy-winged, except Greys).—First, Messrs. Bullock and Rapson, Leamington. Third, W. Ballard, Woodeote Lodge, Leamington. (Second withheld.)

GAME (Duckwings and other Greys and Blues).—First, W. M. Marryatt, Boothroyd, Dewsbury. Second and Third, W. Bentley, Scholes.

GAME COCKS.—First, S. Mathew, Chilton Hall, Stowmarket, Suffolk. Second, W. Cox, Brailsford Hall, Derby. Third, G. W. Moss, The Beach, Aigburth. Highly Commended, Mrs. H. Sharpe, Mill Lane, Bradford.

HAMBURGHS (Golden-pencilled).—First, Messrs. Carter and Gaultier, Poulton-le-Fylde, near Preston. Second, W. H. Dyson, High Street, Horton, Bradford. Third, Miss S. Coates, Bicton, Shrewsbury. Highly Commended, J. Martin, Mildenhall Mill, Claines, Worcester. (An excellent class.)

HAMBURGHS (Silver-pencilled).—First and Second, E. Archer, Malvern. Third, Rev. F. B. Pryor, Bennington Rectory, Stevenage, Herts. Highly Commended, T. Keable, Rowdefield Farm, Devizes, Wilts. (A meritorious class.)

HAMBURGH COCKS (Gold or Silver-pencilled).—First, T. Keable, Rowdefield Farm, Devizes. Second, E. Archer, Malvern.

HAMBURGHS (Gold-spangled).—Second, W. R. Lane, Bristol Road, Birmingham. Third, J. Dixon, North Park, near Bradford. (First withheld.)

HAMBURGHS (Silver-spangled).—First, Miss E. Deighton, Saltaire, near Bradford. Second, J. Robinson, Vale House, near Garstang. Third, Captain Beardmore, Uplands, near Fareham. Commended, Mrs. H. Sharp, Mill Lane, Bradford. (A good class.)

HAMBURGH COCKS (Gold or Silver-spangled).—First, J. Davies, Bull Street, Harborne, near Birmingham. Second, J. Whitehouse, jun., Selly Oak, near Birmingham.

POLISH (Black with White Crests).—First, G. Ray, Ivy Cottage, Minstead, Lyndhurst, Hants. Second, J. Dixon, North Park, near Bradford.

POLISH (Gold).—Second, J. Dixon, North Park, near Bradford. (First and third withheld.)

POLISH (Silver).—First, G. C. Adkins, West House, Edgbaston. Second, J. Dixon, North Park, near Bradford. Third, P. H. Jones, High Street, Fulham.

POLISH COCKS.—Second, G. C. Adkins, West House, Edgbaston. (First withheld.)

MALAY.—First, J. Rumsey, 182, High Street, Shadwell. Second, N. Sykes, jun., 22, York Street, Globe Road, Mile End. Highly Commended, S. Saunders, 12, Portman Terrace, Globe Road, Mile End. (A capital class.)

FOR ANY OTHER DISTINCT BREED.—First, C. Coles, Fareham (Andalusian). Second, Hon. Miss Dillon, Ditchley Park, Enstone, Oxon (Silky Negroes). Highly Commended, H. Gilbert, 17, Upper Phillimore Place, Kensington (Silk or Negro Fowls from China); C. Coles, Fareham (Andalusian).

BANTAMS (Golden-laced).—First, T. H. D. Bayly, Ickwell House. Second, U. Spary, Markyate Street, Herts.

BANTAMS (Silver-laced).—First, U. Spary, Markyate Street, Herts. (Second withheld.)

BANTAMS (White).—First, Rev. P. W. Story, Charwelton, Daventry, Northamptonshire. (Second withheld.)

BANTAMS (Black).—First, Hon. W. W. Vernon, Wolseley Hall. Second, W. Barber, Globe Cottage, Globe Road, Mile End. Highly Commended, J. Monsey, Thorne Lane, Norwich. (A really good class.)

BANTAMS (any other variety).—First, I. Thornton, High Street, Heckmondwike, near Leeds. Second, T. H. D. Bayley, Ickwell House. Highly Commended, T. H. D. Bayley, Ickwell House.

GEESE (White).—First, W. Manfield, jun., Dorehester. Second, T. Williams, 7, Broad Street, Reading.

GEESE (Grey and Mottled).—First, Mrs. Seamons, Hartwell, Aylesbury, Bucks. Second, S. Rigby, Ashby (Toulouse). Highly Commended, S. Rigby (Toulouse). (A good class.)

DUCKS (White Aylesbury).—First, Mrs. Seamons, Hartwell, Aylesbury, Bucks. Second, J. Weston, Aylesbury. Highly Commended,

Mrs. Green, Lower Cheam, Surrey; J. Weston, Aylesbury. (A perfect class.)

DUCKS (Rouen).—First, T. Keable, Rowdefield Farm, Devizes. Second, J. K. Fowler, Prebendal Farm. Highly Commended, T. Keable, Rowdefield Farm. (A good class.)

DUCKS (any other variety).—First, H. Churchill, Gloucester (Buenos Ayres). Second, Hon. Miss Dillon, Ditchley (Buenos Ayres). Highly Commended, H. Churchill, Gloucester (Buenos Ayres). Commended, Captain Beardmore, Uplands, near Fareham (Buenos Ayres); H. Churchill, Gloucester (South American or White-throat Duck); F. W. Earle, Edenhurst, Prescott, Lancashire (Buenos Ayres). (An unusually good class.)

TURKEYS.—First and Second, R. Brand, Great Shelford. Commended, Miss L. Crawshaw, Caversham Park.

PIGEONS.

POUTERS OR CROPPERS.—*Black Cocks*.—Prize withheld. *Yellow Cocks*.—Prize, H. Child, jun., Sherbourne Road, Birmingham. *Yellow Hens*.—Prize, F. G. Stevens, Hemyock, Wellington. *Blue Cocks*.—Prize, F. G. Stevens, Hemyock, Wellington. *Blue Hens*.—Prize, F. G. Stevens, Hemyock, Wellington. *Red Cocks*.—Prize, G. C. Adkins, West House, Edgbaston. *Red Hens*.—Prize, F. G. Stevens, Hemyock, Wellington, Somerset. *White Cocks*.—Prize, J. M. Eaton, 81, Upper Street, Islington. Commended, W. B. Date, 22, Hugh Street, Eceleston Bridge; F. G. Stevens, Hemyock, Wellington. *White Hens*.—Prize, W. B. Date, 22, Hugh Street, Eceleston Bridge.

CARRIERS.—*Black Cocks*.—Prize, W. Thompson, 6, Boundary Street, Church Street, Shoreditch. Highly Commended, G. Crocker, 23, Queen Street, Plymouth; F. G. Stevens, Hemyock, Wellington, Somerset. *Black Hens*.—Prize, G. C. Adkins, West House, Edgbaston. *Dun Cocks*.—Prize, W. F. Cross, Battersea. Highly Commended, W. F. Cross, 3, Oak Terrace, Bridge Road, Battersea; S. Summerhayes, Fore Street, Taunton. *Dun Hens*.—Prize, S. Summerhayes, Fore Street, Taunton. Commended, G. Crocker, 23, Queen Street, Plymouth; W. F. Cross, Battersea. *Blue Cocks*.—Prize, W. Thompson, 6, Boundary Street, Church Street, Shoreditch. *Blue Hens*.—Prize, W. Thompson, 6, Boundary Street, Church Street, Shoreditch. *White Cocks*.—Prize, S. Summerhayes, Fore Street, Taunton. *White Hens*.—Prize, S. Summerhayes, Taunton.

DRAGOONS.—*Black*.—Prize, S. Millin, 8, Silver Street, Notting Hill. *Blue*.—Prize, G. C. Adkins, West House, Edgbaston. *Red*.—Prize, F. G. Stevens, Hemyock, Wellington, Somerset. Highly Commended, S. Summerhayes, Fore Street, Taunton. *Yellow*.—Prize, S. Summerhayes, Fore Street, Taunton. *White*.—Prize, F. Harding, jun., Bury Hall, Edmonton.

ALMOND TUMBLERS.—First, G. C. Adkins, West House, Edgbaston. Second, J. Thomas, 10, Denmark Street, Camberwell. Third, J. Davey, 8, Park Place, Terrace, Paddington.

SHORT-FACED MOTTLES.—*Black*.—Prize, F. G. Stevens, Hemyock, Wellington. *Red*.—Prize, E. R. Maddeford, Staines. *Yellow*.—Prize, F. G. Stevens, Hemyock, Wellington.

SHORT-FACED BALDHEADS.—*Black*.—Prize, S. Millin, 8, Silver Street, Notting Hill. *Blue*.—Prize, F. C. Esquilant, 346, Oxford Street. *Silver*.—Prize, A. G. Brooke, Parkfield Terrace, Exmouth Street, Birkenhead. *Yellow*.—Prize withheld.

SHORT-FACED BEARDS.—*Black*.—Prize, F. C. Esquilant, 346, Oxford Street. *Blue*.—Prize, J. Thomas, 10, Denmark Street, Camberwell. *Red*.—Prize, W. J. Woodhouse, Old Street Road. *Silver*.—Prize, F. C. Esquilant, 346, Oxford Street. *Yellow*.—Prize, J. Thomas, 10, Denmark Street, Camberwell.

SHORT-FACED TUMBLERS.—*Black*.—Prize, E. R. Maddeford, Staines. *Blue*.—Prize, F. C. Esquilant, 346, Oxford Street. *Red*.—Prize, F. C. Esquilant, 346, Oxford Street. *Yellow*.—Prize, F. G. Stevens, Hemyock, Wellington.

JACOBINES.—*Black*.—Prize, E. R. Maddeford, Staines. Commended, F. C. Esquilant, 346, Oxford Street. *Red*.—Prize, H. Morris, Perry Vale, Forest Hill. *Yellow*.—Prize, E. R. Maddeford, Staines. Highly Commended, G. C. Adkins, West House, Edgbaston; Miss Elliott, Osborne House, Taunton. (A good class.)

OWLS.—*Blue*.—Prize, H. Gilbert, 17, Upper Phillimore Place, Kensington. Commended, G. C. Adkins, West House, Edgbaston; F. C. Stevens, Hemyock, Somerset. *Silver*.—Prize, G. C. Adkins, West House, Edgbaston. Commended, F. G. Stevens, Hemyock. (A nice class.) *Yellow*.—Prize, S. Summerhayes, Fore Street, Taunton. *Black or White*.—Prize, S. C. Baker, Pheasantry, Beaufort Street, Chelsea.

NUNS.—*Black*.—Prize, G. C. Adkins, West House, Edgbaston.

TURBITS.—*Blue*.—Prize, Mrs. Parkinson, Roxholme Hall, Sleaford. Commended, Miss Elliot, Osborne House, Taunton. *Red*.—Prize, E. R. Maddeford, Staines. *Yellow*.—Prize, G. C. Adkins, West House Edgbaston. Highly Commended, E. R. Maddeford, Staines. *Black, or any other Colour*.—Prize, C. R. Titterton, Birmingham. Commended, J. Baily, jun., Rosemary Farm, Blackwater, Hants; Miss Elliot, Osborne House, Taunton; W. B. Tegetmeier, Muswell Hill.

FANTAILS.—*Black*.—Prize, G. C. Adkins, West House, Edgbaston. *Blue*.—Prize, G. C. Adkins. *White*.—Prize, E. R. Maddeford, Staines. Highly Commended, Miss J. Milward, Newton St. Loe, near Bath; Mrs. Parkinson, Roxholme Hall, Sleaford; F. G. Stevens, Hemyock, Wellington, Somerset.

BARBS.—*Black*.—Prize, F. G. Stevens, Hemyock. Highly Commended, G. C. Adkins, West House, Edgbaston. Commended, E. B. Maddeford, Staines. (An excellent class.) *White*.—Prize, F. G. Stevens, Hemyock. *Yellow*.—Prize, E. R. Maddeford, Staines. *Red, or any other Colour*.—Prize, P. H. Jones, Fulham.

MAGPIES.—*Yellow*.—Prize, C. L. Sutherland, Coombe, Croydon. *Black*.—Prize, H. Morris, Perry Vale, Forest Hill. *Red*.—Prize, Miss Elliot, Osborne House, Taunton. Commended, G. C. Adkins.

TRUMPETERS.—Prize, G. C. Adkins, West House, Edgbaston. Highly Commended, A. G. Brooke, 93, Parkfield Terrace, Exmouth Street,

Birkenhead; F. G. Stevens, Hemyock, Wellington, Somerset. Commended, F. G. Stevens, Hemyock. (A good class.)

SPANISH AND LEGHORN RUNTS.—Silver Cup, S. C. Baker, The Pheasantry, Beaufort Street, Chelsea. Second, C. R. Titterton, Birmingham. (This class much commended.)

ANY OTHER VARIETY.—Prize, S. Summerhayes, Taunton (Meeves). Prize, J. Thomas, 10, Denmark Street, Camberwell (Chequered Silver Owls). Commended, W. Grave, High Street, Chelmsford (Mottled Jacobins); Mrs. Parkinson, Roxholme Hall, Sleaford (German Swallows).

RABBITS.

FOR LONGEST EARS.—First, W. S. Roffey, 6, Albert Street, Woolwich. Second, J. Taylor, Hyson Green, near Nottingham (Spanish Buck).

BLACK AND WHITE.—First, J. Haile, 11, Wood Street, Millbank, Westminster (Buck). Second, J. Guest, Wrentham Street, Birmingham (Doe). Highly Commended, J. Haile, 11, Wood Street, Millbank (Doe); T. Hawkes, Stratford, Essex (Doe). Commended, J. H. Wynne, 5, Burr Street, Lower East Smithfield, (Buck).

YELLOW AND WHITE.—First, W. S. Roffey, 6, Albert Street, Woolwich. Highly Commended, G. Mills, 3, Victoria Place, Sandhill, Plumstead, Kent (Doe). Commended, J. Laurence, 125, Great Charles Street, Birmingham (Buck); J. Harber, 3, Church Row, Church Fields, Greenwich (Buck); W. Boorer, Plumstead (Doe). (Very good class.)

TORTOISE-SHELL.—First, J. Haile, 11, Wood Street, Millbank, Westminster (Doe). Second, W. Porter, 57, Camden Street, Notting Hill (Buck). Commended, J. H. Wynne, 5, Burr Street, Lower East Smithfield (Buck).

BLUE AND WHITE.—First and Second, J. Laurence, 125, Great Charles Street, Birmingham (Buck and Doe).

GREY AND WHITE.—First, J. Haile, 11, Wood Street, Millbank (Buck). Second, J. Guest, Wrentham Street, Birmingham (Doe).

SELF COLOUR.—First, Mr. J. Laurence, 125, Great Charles Street, Birmingham. Second, H. D. Grissell, Norbury Park, Dorking (Doe). Highly Commended, N. Norman, Bull Fields, Plumstead (Doe); J. C. Savage, 6, Thomas Street, Woolwich.

FOR WEIGHT.—First, N. Norman, Bull Fields, Plumstead (Doe). Second, J. D. Slough, 15, Charles Street, Durham Street, Hackney Road (Doe).

FOREIGN RABBITS.—First, E. J. Vipan, St. Ives (Chinehilla Silver Grey (Doe). Second, T. Moore, 40, High Street, Doneaster (Angora).

JUDGES OF POULTRY.—Messrs. Baily and Hewitt.

JUDGES OF PIGEONS.—Messrs. Bellamy and Cottle.

JUDGES OF RABBITS.—Messrs. Fox, Housden and Webster.

PLANTS FOR A POULTRY GARDEN.

THERE are many persons who are so partial to poultry as to make their fowls the first and the garden the second consideration, letting their young chickens have free range amongst their plants; and others who, without making any pretension to having a garden at all, are glad to grow a few plants in the poultry run. I have always been in one or other of these lists, therefore have some experience as to what plants may be grown without injury, where there are fowls.

Supposing the garden is rather confined in space, and the birds have not free range over the adjoining fields, it will be requisite to grow some green food for them to pick at. Nothing answers this purpose better than some plant of the Cabbage tribe,—as Kale, Sprouts, &c., which may either be sown or transplanted for their use; they are so fond of these plants, that it is useless to attempt to grow them for any other purpose when fowls have access.

Provided a supply of such green food as they like is prepared for them, I have found that the following plants may be grown without being the least injured:—Jerusalem Artichoke, Potato, Broad Beans, Rhubarb, Parsnip, Carrot, Parsley, and most other potherbs; Scarlet Runners and French Beans, at least until the seeds ripen; Vegetable Marrow and Pumpkin, the plants being preserved from injury by a coop over them in their earliest stages; Onions, Lettuce, Turnips, &c.

Bush fruit suffers considerably from fowls,—Currants, Raspberries, and Gooseberries particularly. Strawberries are destroyed by being scratched over for insects; but fruit trees generally flourish luxuriantly; and I recollect, in several bad Apple seasons, noting that the Apple trees in the poultry run were always the most productive of any in the neighbourhood.

Of course, these remarks, as to the plants that are not injured by fowls, apply only to those cases in which the birds are freely supplied with food; for if kept in a state of semi-starvation, they devour Turnips, Beans, and many other things, they will not touch if well fed.

I have now sixty Game Bantam chickens, of this year, running in my garden, and four old birds, and I cannot perceive that any of the plants in my first list have suffered injury.

I would wish it, however, to be understood, that I am not advocating, as a general rule, the introduction of poultry into gardens, but merely stating what plants can be safely grown where such arrangement is unavoidable.—W. B. TEGETMEIER.

DRIFFIELD (YORKSHIRE) AGRICULTURAL SOCIETY'S POULTRY SHOW.

THE one just closed was the fifth annual meeting of this Society, and we were pleased to find that it exceeded those of former years. It is held in connection with the Driffield Agricultural Society, and is evidently not the least popular division of their show-yard, if continuous throngs of visitors are to be deemed as proof. It was very well attended, and the weather was the brightest and hottest of summer time. This leads us to a general remark that may possibly show the way to future improvement.—There is no doubt that the birds were far too much exposed to the vicissitudes of the weather; indeed, the sunlight was so continuous and insufferable, that most of the poultry presented symptoms of extreme prostration and difficulty of breathing. The pens are simply wickerwork, entirely open, and the shape of a beehive; consequently, they (when ranged on tressels a yard or so high) do not afford the slightest shelter against whatever stress of weather may ensue. The Ducks, Turkeys, Guinea Fowls, and Geese, being placed upon the green sward, suffered comparatively little. A slight covering of some kind or other would, undoubtedly, be a great improvement. At this season of the year, very high "condition" is scarcely to be anticipated, inasmuch as the annual moult prevents it; still, as a whole, the birds were better in feather than expected.

The *Game* were among the best classes, several pens of Black-breasted Reds, and also Duckwings, being superior. The first prize pen of *Dorking* chickens were unusually good. The *Spanish* fowls were a failure. Among the *Cochins*, the prize Single Cock (a white one) was worthy of especial commendation. Some of the Golden-pencilled *Hamburgs* were very good. The *Geese*, *Turkeys*, *Turkey Poults*, *White Decoy Ducks*, and prize *Rouen Ducks*, would have been creditable to any poultry exhibition. The *Pigeons*, although but a small, were a very praiseworthy collection.

The Judges were — Smith, Esq., of Skelton Grange, near York; and Edward Hewitt, Esq., of Spark Brook, Birmingham.

The Committee proved themselves energetic, and, consequently, very few of the fowls arrived too late for competition, but were generally penned by the time specified. The attendance of visitors exceeded that of former years, and expressions of satisfaction were general.

We would suggest, that, were some little addition made in future years to the amounts offered for premiums, although necessarily attended with an increased demand for entry, the competition would be greater.

COCHIN-CHINA (Cinnamon or Buff).—First, G. Simpson, Hunmanby. Second, W. Charters, Driffield (Buff). *Chickens*.—No birds exhibited. *Best Cock*.—Prize, W. Charters, Driffield (Buff).

COCHIN-CHINA (any other variety).—First, D. B. Turner, Hull, (Partridge). Second, S. Holloway, Hull (Black). *Best Cock*.—Prize, H. Ruston, Middleton (White).

DORKINGS.—First, S. Burn, Whitby. Second, H. W. B. Bewick, Helmsley. *Chickens*.—Prize, T. Holtby, Driffield. Extra Second Prize, H. W. B. Bewick, Helmsley. A good class. *Best Cock*.—Prize, Mrs. Dawson, Poundsworth Mills, Driffield.

SPANISH.—First, S. Burn, Whitby. Second, G. Roberts, Driffield. *Chickens*.—Prize, S. Robson, Pocklington. *Best Cock*.—Prize, J. C. Anstey, The Retreat, Kilham.

MALAYS.—First, G. Robson, Savile Street, Hull. Second Prize, withheld.

GAME (Black-breasted).—First and Second, H. Adams, Beverley. Commended, J. Laycup, Driffield. *Chickens*, Prize, W. W. Boulton, Beverley. Commended, H. Adams, Beverley; G. Leason, Driffield. *Best Cock*.—Prize, T. Vialls, Wansford.

GAME (Blue).—First, J. Graham, Burton Agnes. Second, Mrs. Graham. *Chickens*.—Prize, M. Cowen, Driffield. *Best Cock*.—Prize, J. Hattersley, Scarborough. Commended, Right Hon. Lady Middleton, Birdsall, Malton.

GAME (any other variety).—First and Second, H. Adams, Beverley. *Chickens*.—Prize, A. O. Young, Driffield. *Best Cock*.—Prize, R. Stephenson, Beverley. Highly Commended, J. Taylor, jun., Burton Agnes.

POLAND FOWL.—First, G. Winter, Hull. Second, B. Garton, Bridlington. *Best Cock*.—Prize, B. Garton, Bridlington.

PHEASANT (Golden).—First, H. Adams, Beverley. Second, J. Taylor, Burton Agnes. *Best Cock*.—Prize, R. Stephenson, Beverley. Commended, T. Smith, Driffield.

PHEASANT (Silver).—First, S. Bielby, Beverley. Second, F. Smith, Arnold Grange, Skirlaugh. *Chickens*.—Prize, B. Garton, Bridlington. *Best Cock*.—Prize, B. Garton, Bridlington.

CHITTERPAT OR CORSICAN.—First, J. Wilson, Nafferton. Second, G. Boswell, Rotsea. *Chickens*.—Prize, J. Faulkner, Hunmanby. *Best Cock*.—Prize, J. Faulkner, Hunmanby.

BANTAMS (Golden or Silver Pheasant).—No birds exhibited. *Chickens*.—Prize, T. Haley, Hull. *Best Cock*.—Prize, D. B. Turner, Hull.

BANTAMS (any other variety).—First, Miss M. K. Turner, Beverley (White). Second, T. Simpson, Tickton. *Chickens*.—No competition. *Best Cock*.—Prize, Miss M. K. Turner, Beverley. Commended, R. R. Ridsdale, Walkington, Beverley.

ANY OTHER VARIETY NOT PREVIOUSLY CLASSED.—First, G. Robson, Savile Street, Hull (Pencilled Hamburgs). Second, S. Holloway, Hull. Extra Second, Rev. R. Whitaker, Cherry Burton (Pencilled Hamburgs). *Chickens*.—No competition. *Best Cock*.—Prize, D. Overfield, Driffield.

EXTRA POULTRY.—Equal First Prize, T. Dawson, Poundsworth Mills, Driffield (Dorking cock and five hens); Mrs. Charters, Driffield (two Cochins-China hens).

GEESE.—Prize, Mrs. Grey, Walkington. Second, Miss Mitchell, Market Weighton. Highly Commended, Mrs. Crompton, Bridlington. Commended, Mrs. Hought, Brigham. (The class of Geese very good.) *Chickens*.—Prize, Mrs. Hought, Brigham. Highly Commended, the Right Hon. Lady Middleton, Birdsall, Malton.

DUCKS.—Prize, S. Burn, Whitby. Second, A. O. Young, Driffield. *Chickens*.—Prize, A. O. Young, Driffield.

EXTRA.—Equal First Prize, Mrs. Dawson, Poundsworth Mills, Driffield (seven White Decoy Ducks); Mrs. Jordan, Eastburn House, Driffield (four Rouen Ducks).

MUSCOVY DUCKS.—Prize, W. C. Laybourn, Nafferton.

TURKEYS.—First, Mrs. F. Rounding, Kilnwick, Driffield. Second, Mrs. Jordan, Eastburn House, Driffield. *Chickens*.—Prize, Miss Edwards, Flixton Carr. Commended, Mrs. Waterworth, Birdsall, Malton. (Turkey classes excellent.)

GUINEA FOWL.—First, J. H. Hodge, High-street, Hull. Second, R. Goulding, Bridlington.

EXTRA.—Prize, Miss Hornby, Wold House, Driffield.

PIGEONS.

Carriers.—Prize, W. W. Richardson, Hull. **Trumpeters**.—Prize, J. Turner, Beverley. **Croppers**.—Prize, S. Robson, Pocklington. **Tumblers**.—Prize, D. B. Turner, Hull. **Jacobins**.—Equal Prizes, J. Turner, Beverley; W. H. Boddy, Hull. **Fantails**.—Prize, S. Robson, Pocklington. 1s. 6d. Prize each, J. Potts, Beverley; F. Lovel, Driffield. *Any other variety*.—Prize, W. H. Richardson, Hull (Dragoons).

CRYSTAL PALACE POULTRY SHOW.—We have been requested to call attention to an omission of the word "Saturday," in the advertisement of this Poultry Show. The admission on the 9th, 10th, and 11th, will be 1s., as usual on those days of the week.

OUR LETTER BOX.

CONSUMPTION IN POULTRY.—An *Old Subscriber* states:—"I have lost a number of fowls lately, and from no more apparent cause than a general falling off in the system. Amongst them, a fine old turkey cock. This I have been induced to examine, both externally and internally, and all that can be discovered, likely to cause death, is an enlargement of what is termed the 'sole,'—that is to say, the spongy substances contained in the cavities of the backbone,—which, in a healthy bird, has the same appearance as lungs. In the present case, those fleshy parts have more the resemblance of kernels in meat, or rather lumps of proud flesh, extending beyond the cavities, of the size of a walnut. The symptoms were a husky cough, a rattling in the throat, and a decline in the system, which I have observed for more than a month. If you could give me any information on the subject I should feel most thankful, as I am anxious to know why my fowls die, while those of my neighbours live and flourish. Would lime or mortar be likely to injure them?"

[The disease which is so graphically described is identical with consumption in the human species, being caused by serofulous tubercles developed in the lungs or "sole" of the bird. Consumption, and the tendency to form tubercles in the system generally, is hereditary. Therefore, I would strongly recommend an "OLD SUBSCRIBER" to change his stock. Animals afflicted with serofula are not wholesome as food, and cannot produce strong and healthy young. The causes which tend to produce tubercles in animals disposed to the disease are cold, damp, and insufficient and unwholesome food. Neither lime nor mortar can have any influence in producing the disease. When tubercles are once formed, the case may be regarded as incurable.]—W. B. TEGETMEIER.

LONDON MARKETS.—AUGUST 9TH.

POULTRY.

Everything is still getting lower in the poultry market. The trade is very dull, and the supply rather increases than otherwise.

	Each.		Each.
Large Fowls ...	5s. 6d. to 6s. 0d.	Leverets.....	3s. 0d. to 4s. 0d.
Small ditto.....	3 0 " 4 0	Pigeons	0 8 " 0 9
Chickens.....	2 0 " 2 6	Guinea Fowls.	0 0 " 0 0
Geese	6 6 " 7 0	Rabbits	1 4 " 1 5
Ducks	2 6 " 3 0	Wild ditto.....	0 9 " 0 10

WEEKLY CALENDAR.

Day of Mth	Day of Week.	AUGUST 17—23, 1858.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon R.and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
17	Tu	DUCHESS KENT BORN, 1786.	30.027—29.955	72—42	N.	—	50 af 4	18 af 7	3 af 10	8	3	53	229
18	W	Andromeda speciosa.	30.089—30.048	76—54	N.E.	—	51 4	16 7	44 10	9	3	40	230
19	Th	Anisomeles fureata.	30.121—30.109	74—61	N.E.	—	53 4	14 7	38 11	10	3	27	231
20	F	Astelma speciosissimum.	30.123—30.098	75—58	N.E.	—	55 4	12 7	morn.	11	3	13	232
21	S	Babiana villosa.	30.104—30.028	81—57	E.	—	56 4	10 7	44 0	12	2	59	233
22	SUN	12 SUNDAY AFTER TRINITY.	29.983—29.869	82—56	E.	—	58 4	8 7	56 1	13	2	44	234
23	M	Bœckia diosmæfolia.	29.812—29.726	86—63	E.	—	N. 6 7	6 7	14 3	14	2	28	235

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 72.2° and 52.4°, respectively. The greatest heat, 92°, occurred on the 18th, in 1842; and the lowest cold, 32°, on the 21st, in 1850. During the period 118 days were fine, and on 99 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ALTHOUGH the operations of sowing, planting, &c., recommended below, will not admit of much delay, nevertheless it will be nearly useless to sow, if dry, scorching weather continues, without watering and shading; therefore, where such cannot be conveniently done, the ground should be in readiness to take advantage of the first change of weather to rain.

CARROTS.—Sow, for early spring use, on a light, well-drained piece of ground. They delight in a sandy soil, and should be only moderately enriched with manure.

CAULIFLOWERS.—Sow. To be protected through the winter in frames, under handglasses; or pot singly in small pots, for planting out in early spring.

CELERY.—Prick out the late seedlings, to grow strong for final transplanting.

CUCUMBERS.—If seed was not sown, as advised in July, for plants for house-culture through the winter, cuttings should be immediately put in, to produce plants for that purpose. All that are grown in frames, or on ridges, will require an abundance of water.

ENDIVE.—Make a last sowing of the *Green Curled*, for spring use. Continue to transplant from former sowings in favourable weather.

LETTUCE.—If a sowing of the sorts recommended to stand the winter was made last week, another good sowing should be made about the end of this; the former to be transplanted in the autumn, and the latter to remain in the seed-bed, to be transplanted in the spring.

ONIONS.—Sow thickly the *White Lisbon*, *Tripoli*, or *Strasburgh*, in beds, to stand the winter. Tread down the seed, and rake it in regularly.

SPINACH.—Sow the *Flanders*, or, if that cannot be got, the *Prickly*, for the main winter crop; it will require a dry-lying situation, with an open aspect to the winter's sun.

FRUIT GARDEN.

STRAWBERRY PLANTATIONS, intended to stand for next season, to be cleared of runners, &c.

WALL TREES.—Remove shreds and nails that interfere with the swelling of the fruit. Allow only as much wood as can be conveniently laid in to remain; for if more is retained, an undue excitement and extension is given to the roots, which, with a superabundant supply of sap, induce in the spring the growth of rank and unproductive wood. The garden engine, or syringe, should be used occasionally of an evening, to wash the trees, more particularly the *Peach* and *Nectarine*, which should also receive a liberal root watering two or three times a week, during the continuance of very hot weather.

FLOWER GARDEN.

To prolong the beauty of the beds, it will be necessary to go over them frequently; pegging down where

required, cutting off decayed flowers and any shoots that encroach upon the edgings of the bed, and attending to the grass and walks, keeping them in the best possible order and neatness. Continue to put in cuttings at all favourable opportunities, until your stock, more particularly of such sorts as require to be good strong plants to live through the winter, is in a fair way for rooting, as advised last week.

AURICULAS.—Finish potting; as, if deferred, the plants will not have sufficient time to establish themselves in the fresh soil before the winter sets in. Let them be exposed night and day, in favourable weather, to the open air, but be shaded from very hot sun, and protected from heavy rains.

CARNATIONS and PICOTEES.—Finish layering without delay.

CLIMBERS (on walls).—To be kept within proper limits.

DAHLIAS.—Water liberally in the evening during hot weather. Cut away all superfluous shoots. The side branches to be kept well tied out to strong stakes, leaving, if possible, an open centre for the admission of light and air.

HERBACEOUS PLANTS.—To be kept neatly tied up, and all unsightly flowers removed.

HOLLYHOCKS.—Propagate the good sorts by cuttings.

ROSES (PILLAR).—To be carefully pruned, cutting out a moderate portion of the old and young wood, so as to lighten their heads, and prevent the wind from blowing them down. Do not cut back, or shorten, the wood to be left, but allow it to grow and ripen during the season.

WILLIAM KEANE.

CRYSTAL PALACE GARDENS.

I SAID I would look over these gardens, and tell how the planting was done this season. The Poultry Show coming off two or three weeks sooner than I intended to make my visit, I thought I might just as well kill two birds with one shot, and make my observations on the floral landscape of the gardens at the same time.

Almost the first thing, then, that I observed was, that the *Geranium Ignescens superba* makes one of the best telling beds at the Crystal Palace. Some of the men call it *Lady Mary Fox*, but her ladyship is a different thing; I ought to know that, as I had the honour of bringing her out fifteen or sixteen years back. Mr. Dennis advertised *Lady Mary Fox* then, at a low figure; I had a bed of it at the first start, and can say of it, that it would make a match bed for *Ignescens superba*. It stands on the sunny-side of the Rose mount, as a corner bed; and there is a circle of it just above that one, an oversight at planting, as the circle should have been on the opposite side of the mount. The next corner bed, towards the rising sun, is of *Lucia rosea*, the best bed of it I ever saw; but it

surely cannot be the original kind. There is not a more perfect bed in the kingdom, and there is not a sun-burnt petal in the bed, although it stands on a south declivity, which has been most trying to many kinds of Verbenas this hot season. The pink *Nosegay* Geranium is now, for the first time, bedded out here, and is a great acquisition; *Cerise Unique* being their only other pink Geranium. Of *Scarlets*, they have only three kinds now, and two of them are my seedlings, *Punch* and *Shrubland Queen*, which is here called *Cottage Maid*: it is sixteen years old this season, and some one else reproduced it lately. It is the best scarlet bedder that has been got from *Frost's Compactum*; *Commander-in-Chief* is the next nearest to it in looks. But let us take the more difficult part to plant first. There is no garden more easy to plant than this, or more susceptible of a change every year,—which is a great point in gardening,—except the two chains in the sunk panels on each side of the centre arrangement.

I said, last August, that they could never improve on the design in planting, and that the only possible improvement must be an improved race of plants, or something that way. One of the chains, the north side one, is improved from last year, by an improved edging plant. The *Cerastium tomentosum* is a more trim, a more architectural plant, as it were, than *Mangles' Variegated* Geranium, which was used last year. The setting of the circles, oblong beds, and the heart-like beds in three corners, is all in silvery *Cerastium*, and also the connecting links between all the beds. The effect gives perfection itself. I hope they will never depart from that arrangement, or, at all events, never return to the “haybands,” which this very chain represented two years since, when all the connecting links were hid by being planted with *Tom Thumbs*, like the beds themselves. The south-side chain is different from last year, in the setting; the variegated *Alyssum* being the connecting plant, instead of the *Cerastium*, as on the other side, or like *Mangles' variegated*, as last year. *Mangles'*, in this way, is preferable to the *Alyssum*, as it is allowed to grow naturally, while *Mangles'* is, and was, trained to perfection in that style of edging. They manage to train and regulate beds of *Mangles' Variegated* Geranium better here than in most places: not a leaf of their largest masses of it seems out of place. One of the chief beauties of a flower-bed, on the terrace, or geometric plan, is to look as if it were cast in a mould; and that is the reason, no doubt, why *Tom Thumb* Geraniums are so much used everywhere. No Geranium grows more regular than *Tom*. All the circular beds, in both chains, are filled with *Tom Thumbs*, edged with white; and all the oblong beds, and a couple of heart-shaped beds, in each of the three corners of the chain, have yellow *Calceolarias* in the centre of the *Scarlet* Geraniums. The three large circular *Rhododendron* beds, in these three angles, shows more clearly, year by year, the original fault of placing a circle in an angle. The four angular beds in each of the end panels of this terrace, are of the right kind of shape; but make them circles, like those *Rhododendron* beds, and their meaning is destroyed. Let the critics say all they can advance to the contrary; but no one can prove, by the rules of the art which created the whole garden, that there is another bed wrongly placed within its boundary. A friend of mine, fresh from Scotland, was so bewildered in the centre of this terrace, that he insisted on its being on a wrong plan, as the beds did not correspond on each side of the walk. But that is not the rule by which to prove a geometric figure at all. The way to test the accuracy of a geometric garden, and also to prove if it is properly planted is this—Suppose it cut

across through the centre, and capable of being folded up like a book, one page, or one half, over the other page, or half. Then, if the figure is true, every bed on the one half will fall on the one just like it on the other half; and if a single bed, or the least part of a bed, will not fit on its fellow, the place is said to be like a pig with one ear; so that it is as easy to prove a thousand acres as a few square yards, and quite as easy to shut as a book.

The planting is proved exactly in the same way. Cut the garden across the middle, and fold the two parts; and if a blue bed, or a yellow bed, or any other coloured bed, does not fall on its fellow, the planting is faulty. There is not a fraction to be altered in either, and both are absolute in the rules of art; but one of them, that is, one side of this rule has been violated, in the planting of this central part of the terrace this season; fold it up, and the beds in each half of the outer circle will fall on each other, tops and bottoms. The very same mistake occurred three or four years back, in front of the large conservatory at Kew. I have not the slightest knowledge to whom either mistake can be referred; but having fallen, more than once, into the same error, I know perfectly well how and why it was done; a rule which is applicable to a different style of planting was adopted, instead of the right one. Planting cross-cornerwise is a rule in grouping beds. But there is none of the grouping system at the Crystal Palace at all, nor at Hampton Court, nor in the garden of the Horticultural Society. But the Italian terrace garden in front of the large conservatory at Kew is on the true grouping system; each half has a separate centre to itself, and round that centre you may plant the beds cross-cornerwise or not, as fancy dictates, the rule being optional. But if the one-half is planted cross-cornerwise, and the other half not cornerwise, the ugly pig with the one ear stares you in the face,—the two ends will not match when doubled up, as it were. The centre part of the great terrace at the Crystal Palace is also in two parts, like the letter D if cut down across the page; but, being on the promenade plan, the beds must follow the walks, and cannot be in groups, nor have centres. Consequently, there can be no crossing in planting them, and each half of the D is but a reflect on the other half. It is very easy to mistake the one style for the other, and the one looks just as well as the other, although it is not proof against the rules of criticism on planting.

It is the novelty and the strictness of the different rules, for the different styles of planting a flower garden, which baffle so many good men, and makes them look ridiculous in the eyes of their betters, when they disclaim against what they are not taught to comprehend. All they say against us is not their fault, by any means, only their misfortune; but we cannot all know all things. And as to such of the details of planting as depend on opinion, one man's opinion may be as good as that of another, and he who pays for the planting should have his opinion represented as he wishes. Personally, I differ from the style of planting every one of the circular beds round the Rose mount this season. But, as there are no rules for taste, I cannot point out a rule that is violated there; and thousands may like them all the better as they are, than as I would have them. I “took down” every one of these beds, and the crop in it. The mere mentioning of the plants, as they stand, and succeed each other, will do more good to beginners, than to say they are in this or that style or taste. What I objected to was copied from the beds in the garden of the Horticultural Society, two or three years back. But where the Society's people took their notion from it is impossible for me to tell. All that I can guess is, that it was not from any of

the alliances in the vegetable kingdom, nor suggested by the rainbow.

But now let me begin the Rose mount, opposite the entrance. Next to it, and No. 1, is a corner bed, and all the corner beds are excellent. It is of *Tom Thumb* edged with a light *Verbena*, in single row. Up that walk are two pairs of circular beds, one pair being of *Mangles' Variegated Geranium* and *Tropæolum elegans*,—two excellent beds, but not matches, nor contrasts, in colour; each bed has a dot of another colour in the centre, two or three plants of *Tom Thumb* in the centre of *Mangles'*, and a purple *Verbena* in the centre of the lovely *Tropæolum*: these dots have no meaning to me, they destroy the good effect of the bed. The next pair is *Geranium Ignescent superba*, with a dot of light *Fuchsia* in the centre, lower than the *Geranium*; and *Phlox Magii*, or one like it, with a dot of *Nosegay Geranium* in the centre.

From this walk No. 1, taking the north or left-hand side, to walk No. 2, there are four circular beds on the mount side of the walk:—Thus, *Blush Verbena*, with a dot in the middle, of a *Geranium* like *Touchstone*; purple *Petunia*, with a *Horseshoe scarlet Geranium* dot; *scarlet dwarf Verbena*, with a dot of *Boul de Neige Geranium*; and *Flower of the Day*, a fine bed with a stupid dot of *Hydrangea* in the centre. The angular bed of the next winding walk up the mount would have been excellent in a moderate season, but the heat and drought is too much for it. It is a fine *yellow Calceolaria*, edged with a new edging plant; the old *Teucrium*-looking *Salvia*, which Mr. Cai used so much at Bedford Lodge twelve years back; it is a faint blue and grey, and makes a capital edging to any strong colour, being itself a neutral. Opposite this angular bed is a circular one of *white Verbena*, with a dot of *Shrubland Rose Petunia*; then a pair of opposite beds—*Nierembergia filicaulis*, a splendid mass, with a dot of *Tropæolum elegans*; and a *yellow Calceolaria*, with a dot of *Salvia patens*; then a bed of *Tom Thumbs*, with a dot of *yellow Calceolaria*; after that a mass of the largest purple *Petunia*, with a *yellow Calceolaria* dot. This huge *Petunia*, called *Magna coccinea*, makes a splendid bed.

Then round a mass of shrubs to walk No. 3, which has a very long point, and a large angular bed, planted with the purple *Zelinda Dahlia*; in the centre, a band of trained down variegated *Ageratum*; and outside, another band of *Mangles' Variegated*, a magnificent bed in a better season. Opposite this corner bed are two circles,—one with *scarlet Verbena*, with a dot of *yellow Calceolaria*; the other, a *light Verbena*, with a dot of *dark Phlox Drummondii*. Also two pairs of circles up the ascending walk. The first pair thus,—a variegated *Petunia*, with *Cottage Maid Geranium* dot; and *Calceolaria amplexicaulis*, with a dot of purple *Petunia*. Next pair, a variegated bed of *Lady Plymouth* and *Dandy Geraniums*, mixed with variegated *Alyssum*, and a dot of *dark Verbena*; the other a purple *Petunia*, and a dot of *Flower of the Day*. Along this circuitous walk, to the next ascending walk, No. 4, are three circular beds. The first is of *Cuphea strigilosa*, with a dot of *erimson Verbena*; the second, a *erimson Verbena*, and a dot of *Prince of Orange Geranium*; and the third, *Mangles' Variegated*, and a dot of *Cerise Unique Geranium*. This brings us to the fourth ascending walk, the angular bed of which is of the *Crystal Palace Dahlia*, trained to within four inches of the ground, and coming into flower-bud; then a band of *Calceolaria amplexicaulis*, and an edging of *scarlet Verbena*, a fine mixture in a good season. Opposite are three circles,—one with *Tom Thumb*, and dot of *yellow Calceolaria*; one with a *white Verbena*, and dot of *Nosegay Geranium*; and the third of *Lobelia speciosa*, with a dot of *Tropæolum*

elegans. Then a pair of opposite beds—one of *Shrubland Rose Petunia*, and dot of *Flower of the Day*; the other a bright pink *Verbena*, and a dot of *Tom Thumb*.

After them, and along the main walk, are five circular beds, before we come to the fifth rising walk. The first is of *Hydrangea*, and dot of purple *Petunia*; the second a *scarlet Verbena*, and dot of variegated *Ageratum*; the third of the old *erimson Rosa indica*, and dot of *Flower of the Day*; fourth, *white Mesembryanthemum spectabile*, and dot of a pink *Geranium*; and fourth, a fine mass of *Tropæolum elegans*, and dot of purple *Verbena*. The angular bed of the fifth rising walk is the magnificent mass of *Lucia rosea*, which I mentioned above, edged with a *white Verbena*; but a *dark crimson* would be the best edging for so light a flower as *Lucia*, in the full sun.

Up this walk are two pairs of circles again. The first pair—the large purple *Petunia*, with dot of *Hydrangea*; and *scarlet Verbena*, with dot of *Mangles'*. The second pair—*Tom Thumb*, with dot of blue branching *Larkspur*; and *yellow Calceolaria*, with dot of *Tom Thumb*. Opposite the angular bed is a mass of *Flower of the Day*, with dot of pink *Nosegay Geranium*. Here is where the value of the loose flowers of the *Nosegays*, in contrast with the globular trusses, of the other breeds of *Scarlets*, can be seen to perfection. From this, the fifth walk, to the sixth and last, are four circles. The first is a blue *Verbena*, with a large white eye—*Cupbearer*, and a dot of *yellow Calceolaria*; the second, *Oenothera prostrata*, and dot of *Salvia patens*; third, *Heliotrope*, and dot of *Cottage Maid*; fourth, *Shrubland Rose Petunia*, and dot of *Boule de Neige Geranium*. And the last of these angular beds is of *Ignescens superba Geranium*, edged with *Flower of the Day*, a splendid mass.

Opposite the bed of *Ignescens surperba* are two circles,—one is of *Cerise Unique*, and the dot of *Heliotrope*; and the other is the last I shall name, missing five more circles in the same style. This last is of *Verbena venosa*, pegged down, which makes a good change; the dot in the centre is of *Tropæolum elegans*. They have excellent hands for training and regulating every kind of bedding plant at the Crystal Palace; and if ever we are to see the shot-silk bed again, that is the place to look for it. The man who trained that bed of *Verbena venosa* will have no more trouble in making a shot-silk bed of it than I have in writing about it. The variegated kind of *Geranium* for making the shot-silk with is now in two rows all round the inner trellis-work, on the top of the mount, with a row of the variegated *Alyssum* between the two.

One of the most curious facts, which we have detected for the first time at the Crystal Palace, is, that two of our best variegated plants destroy each other most completely when they are planted in contact, notwithstanding that each of them will set off to advantage any other kind of bedding plant. This variegated *Alyssum* is the thief; it steals away all the riches of every kind of variegated *Geranium* placed in contact with it. Hundreds of the *Alyssum* round this mount, and round the said circle on the top thereof, with the stolen property in their possession, stare you in the face without a blush. Therefore, when you happen to have these two good subjects to lodge for a season, pray do not put them in the same bed, nothing being so provoking as to discover that, after all one's pains, the best two beds in the garden, or the best two bedding plants in one bed, neutralise each other; and this instance of it could not possibly have been foretold or foreseen. "Who would think it," without seeing it?

I think I once likened the main walk, which goes round the bottom of the Rose mount, to the rim of a carriage wheel, and the six walks, which rise from it

to the summit of the mount, to six spokes. Well, that is just the thing; but the spokes come not at equal distances into the rim, and some of them are curved more than others, on account of the nature of the rise. Therefore, one angular bed can only be had to one spoke, or walk; on the other side of the walk the beds must be circular. But the other end of the spokes is at equal distances all round the centre. Now, just think of a wheel lying flat on the ground, with six spokes only, and they taking a curve to the rim; the axletree, bolt upright in the centre, will represent the flagstaff on the Rose mount. There are two flights of steps to get up from the ends of the spokes to the level top, where the axletree is. Between the first set of flights, all round, are the Roses,—all dwarfs, and all in rows of one kind of Rose in each of the six divisions. All round, between the second flight, is in flowers, in three match pairs, very well done,—first, a row of *blush* Verbena, then three rows of *yellow* Calceolaria, as many of *Tom Thumb*, and a single top row of *purple* Petunia. The next division is of *purple* Verbena the first row; then Calceolaria and *Tom Thumb*, as before; and the top row a *white* Petunia. Here you see the colours of the edging plants, top and bottom, are done cross-cornerwise, without a change of plants. The Verbena gives a light edge to one, and a dark edge to the other on the lower side; the purple Petunia and the white one do the same at top,—all lawfully done, and executed in the same style right round. The top is wider than I can tell, but the axletree of the wheel represents the Maypole, or flagpole, in the centre. Round the edge of this flat top runs a walk, and the six walks up the flights cross it, and go on right to the Maypole; therefore, the flat itself is divided by these six walks into six divisions, each division being in grass; and the grass is sunk parallel with a long oval flower-bed at the bottom of each.

These, again, are capitally done in opposite pairs. One pair is four or five rows of *Tom Thumb*, along the middle of the long oval; four rows of dark purple Verbena next; and a single line of *Cerastium tomentosum* running round the whole. The right opposite bed the same, making the pair. Next pair thus,—four or five rows of purple Petunia along the middle, three rows of *Tom Thumb* on each side, and a broad band of variegated Alyssum for an edge. And the third pair, five rows of Calceolaria, three rows of *Tom Thumb*, and one single row of edging with *Mangles' Variegated* Geranium. All these are downright good beds, and all the circles which I have named the same, except the plan of small meaningless dots in the centre.

The flagstaff is supported by four guy-ropes; the lower ends of the ropes are fixed at twenty feet from the pole, and a scarlet circle, or circular bed of *Tom Thumb*, eight or nine feet across, with an edging of purple Verbena, stands round each end, as does a similar bed round the flagstaff itself; all being on gravel, and these beds having verges of grass two feet wide.

Over the circular walk, round the upper rim, are the trellises for climbers, and the iron arches in arabesque, to be covered with plain green Ivy. There are twelve of these arabesque arches, two in each division. Their meaning has never been described, that I know of, nor their arrangement either; but now that the creepers and climbers have grown so far as to bid fair to tell the story in two, or, at most, in three, more years, one begins to understand the whole thing. It is an Italian dodge, and every man in Italy, from the Doge of Venice to the Arcadian shepherd, who has got a Vine to train about his palace or cottage, adopts some part of the plan which is compounded on the top of the Rose mount. I was never in Italy, but Lady Middleton, who studied there for a length of time,

told me of these plans fifty times over, long before the Crystal Palace was ever thought of, and I shall tell in my turn next week.

D. BEATON.

SUMMER AND AUTUMN PRUNING TRAINED FRUIT TREES,

IN CONNECTION WITH ROOT ACTION.

SOME time has elapsed since this matter was alluded to, in June, in reply to a "CONSTANT READER." It has come to our recollection now from an inquiry the other week, respecting the proper treatment of trained trees from the nursery, and also from several reminders of an implied promise.

Promises of this kind, from mere press of matter, often meet the fate of work that should be done in a garden. Gardening work has so increased of late years, without, in many cases, an adequate increase of labour power, that the gardener has often to consider, not what ought to be done, but to make his choice, out of many things demanding immediate attention. The tastes, and likes and dislikes of the proprietor have also to be consulted; so that it is no uncommon thing to find, under the management of some of our best gardeners, some points of culture comparatively neglected, or attended to too late, to give the respective subjects justice. Hence, some of the best, because the most *timely*, gardening will very frequently be found in small places, where the labour power is sufficient to overtake every thing in time.

The hints given at page 151, and the copious directions of our esteemed coadjutor, in whose province this matter is more directly placed, will have prevented more concise instructions coming too late; while the very copiousness of these directions would have prevented me, except on solicitation, from saying a word on the subject. What ensues will bear reference chiefly to trees nearly or fully established.

Let it be clearly understood, then, that the chief value of summer pruning is twofold,—admitting light and air for the perfecting of fruit-buds, and regulating the strength of root action, by the amount of perspiring mediums in the shape of leaves and shoots. No mere cutting of roots at one time, or an indiscriminate removal of bundles of summer shoots at another, will effect this regulation, so as to ensure continued fruitfulness, as there will ever be a tendency in roots and tops to act relatively and co-relatively to each other. Thus, great masses of strong, vigorous shoots on a young tree nearly established, are not merely a consequence, but also a cause of vigorous root action. Remove these all at once, say in the month of August, and you let more light into your spurs and buds, and, no doubt, you give a temporary check to the vigour of the roots,—but not a lasting one; as you will find that the vigour stored up in the stem and roots will next season give you quite as great a display of wand-like shoots again. You merely, as it were, repeat the process which the Osier grower pursues with his Willow stool every year. If these Willows are not cut too soon, some years elapse before the stools become exhausted.

This comparative exhaustion would not so soon take place in a fruit tree, because, when you merely remove these summer shoots, you still leave a large perspiring surface of foliage, which keeps up and sustains continued root action. Were there a continued pinching, stopping, and removing of Willow shoots, so as to prevent anything like vigorous growth, you would so curtail root action, that in a few years there would not be strength in the roots to produce Willows at all.

Did we keep continually stopping and removing all summer growth on fruit trees, and also removing

portions of foliage, we would in time so neutralise the vigour of the tree, that it would produce hardly any fresh growth at all,—but might ultimately be destroyed by the process, just as we get rid of unwelcome root weeds by continually cutting their tops off. To insure moderate vigour, combined with fertility, a middle course is necessary.

Thus, in the case of an extra production of young shoots on an espalier, wall tree, or dwarf bush, or pyramidal standard, we would, if we could get at them, nip out the half of these, with the finger and thumb, in May or June; stop the points of another half a fortnight later, and shorten or remove the rest a fortnight later still. Those that had their points nipped out would thus have more vigour and light thrown into, and upon, their lowest buds; fresh shoots would break from their points; and these could be removed, and the shoot itself shortened still farther back in August, to form a spur; or left, if a standard, to be studded the following year, or, at farthest, in the second year, with buds of a fruitful character. This fertility will be brought about by the greater amount of sunlight admitted to the foliage left; whilst the diminished surface of foliage will also gradually lessen the extreme vigour of the roots; and thus, other things being favourable, a period will be arrived at in a young tree, which naturally takes place in an old one, when almost the whole vigour of the tree is thrown into the production of fruit-buds, and but little additions in the shape of mere growth of shoots are made.

It is only, however, as implied above, under favourable circumstances, that such results can be expected from any system of pruning. Under these circumstances, disbudding and stopping will do much to insure fertility. There are other circumstances, however, in which patience herself would come down in chagrin from her monument, before a desirable fertility would be promoted by such means. It is a grave error to suppose that any stopping, or lopping, or disbudding of summer shoots, will at once make a tree fertile. The lengthened details, and the minute drawings as to pruning, in books, have, in this respect, done much unintentional harm. The reader was led to depend upon stopping and pruning, and to think little of what chiefly supplied shoots and spurs. Making trees in every case fertile, by such detailed processes of pruning, was about as wise a process as keeping men alive by placing them up to their necks in a nourishing fluid, which, Tantalus-like, they were not by any means to taste. Nature intended that the animal should receive its chief nourishment through the mouth and the stomach, just as she intended that fruit trees should receive their primary elements of growth and fertility through the medium of the roots. While shoots and spurs were in everybody's head, and placed, in drawings innumerable, before the eyes of all who choosed to look at them; roots, the mainspring of the whole beautiful machinery, were left underground to take care of themselves. My first preceptor, the late Mr. Beattie, of Scone, was among the first, so far as I am aware, to direct attention to the condition and the position of the roots of fruit trees. Some of his pupils, such as Mr. Duncan, have not forgotten to embody his principles in practice. Of all living men, I presume Mr. Errington has done most to inculcate sound views in this respect. Get the roots all right, and all and every mode of summer or other pruning becomes of very secondary importance, just because the vigour will be thrown more into fruit-buds than wood-buds.

Without keeping such a fact prominently in view, I consider that mere directions as to summer pruning would only mislead the inexperienced, and pave the

way to continued disappointment. The most inexperienced fruit grower may soon rival and outshine the most successful of old practitioners, if he will only give himself the trouble to thoroughly understand and execute two facts well ascertained and fully established. First, that extreme luxuriance in growth, and extreme fertility in fruit, are entirely antagonistic to each other. The second, which is only a repetition or modification of the first, is, that the rapid luxuriant production of timber, and the early production of well-flavoured fruit, are most easily and thoroughly secured, by the roots being placed in circumstances entirely different; depth of soil, moisture, and richness, being not more necessary in the one case, than comparative shallowness, dryness, and soil unstuffed with rank manure, in the other.

For instance, here are two nice Oak trees, some eight or nine feet in height, carefully taken up and stored with good roots,—even the tap root almost untouched. Of one of these it is desirable to make a fine timber tree as soon as possible, I therefore trench the ground as deeply as I can, and even pick up and loosen the subsoil, whatever it may be, incorporating also a fair portion of manure. I plant the tree with the tap root entire, and give every encouragement for the roots to go downwards, as well as laterally, and expect vigorous growth. In the case of the other, it is desirable to get acorns as soon as can be. I therefore cut the tap root, and do not loosen the soil to any great depth, or, if I do, I place the roots near the surface; and thus the plant is kept alive, but has a stunted growth in comparison with its neighbour. That growth is more thoroughly matured, because more fully exposed to solar influence, and, therefore, I get the acorns sooner. Were the plants both very young when given me, I might treat them both alike for a few years, until I got some size, and then I would lift one, and treat it as mentioned above for the production of acorns. We must act in a similar manner with our fruit trees. In order to get them some size, without making them extra luxuriant, we may resort to several modes: plant in rich soil at first, and, when of some size, relift and transplant, or lessen the number and length of roots; or, what I would generally prefer, trench the ground, without adding any manure; plant the trees in little hillocks, with the roots spread out within a few inches of the surface of the soil; water when necessary, so as to reach only a little beyond the roots; and get the necessary vigour by rich surface dressings, as long as they are found necessary.

Here I may add a third fact, for the consideration of the fruit grower, which I believe to be pretty well established;—namely, that when the roots of trees come in contact with nitrogenous and carbonaceous substances, in the shape of manure, at a considerable depth, and especially when in connection with abundant moisture, there is always a tendency to the production of rank, luxuriant, and unripened wood, and consequent opposition to fruitfulness; whilst, when such manure is spread on the surface, and the roots are at no great distance below it, these roots will be kept moist by its influence, and not enticed downwards so much in search of moisture: the sun and air acting upon, ameliorating, and oxygenating it, whatever moisture trickles through it, whether supplied by rains or the water-can, will not only give the necessary vigour, but promote the swelling of fine, prominent fruit-buds. For instance, here is a vigorous Pear tree, the bulk of the roots are from two to three feet or more from the surface, where they are reveling—if roots can do so—in rank, moist, manure, on which even the air never operates, and you have shoots in abundance every summer, like huge Willow rods. Pinch, stop, and thin these as you will, but it

will be long before you get any abundance of well-flavoured fruit. Fruit at all will only be forthcoming after bright, dry summers, and favourable autumns, or when the signs of age appear. Here is another, espalier or standard, it matters not which; the leading shoots may be from eighteen inches, and the side shoots some six or more, in length. The roots have never directly come in contact with manure, and the deepest are little more than fifteen inches from the surface,—many of the roots not half that depth; and stopping some shoots, and thinning out others, is attended with a certain production of fruit-buds. Look at two Vines in these relative circumstances,—and you find the one with vigorous wood, leaves like parasols, bunches few and disproportionate, and poor as to flavour; while in the other case you will have an excess of fertility, leaves very small in comparison, and berries, though perhaps not so large, well stored with sweet saccharine matter.

Before you can depend on the hints as to stopping, cursorily given at page 151, you must form an idea of the condition and depth of the roots of the trees. I have referred to trees near Winchester, in a fine healthy state, the points of the shoots of which had been stopped to concentrate vigour and solar influence on the lower buds. Since then I have been informed, that these bush standards are loaded with fruit this season, down to the very stem. The situation is very exposed; the soil, light loam, two feet deep, resting on solid chalk. In neither Apples nor Pears is there any symptom of canker. Among Apples are—*Golden Pippin* (loaded), *Nonpareil*, *Oslin*, *Sturmer Pippin* (which keeps nearly till Apples come again), *Margils*, and others of the very best kinds; while among Pears were—*Seckel*, *Dunmore*, *Beurré Rance*, *Easter Beurré*, *Forelle*, *Glout Morceau*, *Winter Nelis*, &c. To ensure this early and abundant cropping, these trees seemed to have had little of the knife. The stopping of the shoots must have formed the chief part of pruning, and I suspect that very little rank manure was incorporated with the lower strata of soil. Canker is such an inscrutable evil, that I am disposed to imitate some of my friends, and in future to plant only those kinds that position seems to suit.

Our "CONSTANT READER" may now have an idea that something besides pruning may be necessary for a Pear or Apple tree, that has been planted six years against a wall, has ten nice horizontal shoots on each side, plenty of summer shoots along these horizontal shoots, but, as yet, no flower-buds. If these shoots were not above from nine to fourteen inches in length, first stopping them in June, breaking them half through three inches from their base, and letting them hang down in July, and removing them altogether in the middle of August, would have a tendency to swell the lower buds, and render them fertile; but if the shoots are not merely numerous, but strong and long, then, in addition to the above, I would recommend either shortening the roots, or, better still, lifting, and replanting them nearer the surface.

If placed in pure loam, it will be all in their favour. If done early in October, the leaves left should be kept from flagging by syringing and shading, but not a bit more than will secure that object. There would thus be a chance for a few fruit-buds the following season, and a good supply in the second.

People used to talk of planting Pears for their children. By looking to the roots we may have fruit in two or three years after planting.

There may be a few words necessary as respects other fruits, but mere pruning, without attention to the roots, will not be over-successful in any case.

R. FISH.

VEGETABLE CROPS

UNDER OVERHANGING FRUIT TREES.

To the gentleman, gardener, or one who cultivates a large space of ground, it has often been a source of much surprise, how a cottager manages to obtain such fair crops of vegetables underneath large, overhanging, fruit trees, which often crowd together in such numbers as to shade the whole of his garden. The usually received maxims of successful cultivation require sun, air, and an unexhausted soil: the two first of these conditions the cottager cannot command, when his Apple, or other fruit trees, hang within four or five feet of the ground, so that he has only the last condition, the soil, to work upon; but, in some cases, his assiduity accomplishes much in this way, and tolerable crops of Potatoes, Parsnips, Carrots, and other things, are the result; the Cabbage tribe and Scarlet Runners require more sun. The secret of success in this case, as well as in many others, does not lie in one great effort, but in continuous applications. A large application of manure, either in the solid or liquid state, will not command success, as the trees will absorb it all; but a frequent feeding with weak, diluted manure water is relished, and duly made use of by the surface crop, which continues to grow and perfect itself under this artificial treatment; while the fruit crop does not seem to derive so much injury, as is generally the case when a vegetable crop has to struggle with it for the uses of the ground on which they are both planted. Whereas, by the cottager's plan, of dealing out every evening, or nearly so, a certain quantity of sewage, the surface crop has more the resemblance of a quantity of potted plants standing on the ground, and daily replenished with liquid food in the usual way. This assiduous care on the part of the cottager, enables him to reap more from his little plot of ground than any other class of cultivators; while, to the industrious man, the labour of supplying the necessary food is amply repaid by the pleasure he feels in having his garden so well stocked, independent of the uses of the articles grown.

Now, the question which the utilitarian will be asking on this matter is likely to be,—Will the general cultivation of all ground underneath fruit trees pay on this principle. This, like many others, is a very difficult question to answer, so much depends on the value that may be put on each article grown. Where things are grown expressly for the London and other markets, and are only expected to realise the usual wholesale market prices, and labour, rent, and the other charges, common on such things, have to be paid for, it will be found most advisable to grow only one crop on the ground at a time, and to do it well; for, truthful as the theory may be, "that it is impossible to do too much for the ground," it rarely can be carried out in practice with a profitable result. I know a fruit grower who only realized 2s. 6d. a bushel on good *Jargonelle* Pears, while Apples scarcely paid for the gathering. These prices, it is needless to say, leave but little margin for the fruit grower to expend much capital in cultivating his ground for any experimental purpose, when the price of vegetables is not much better than that of fruit. The object is not to raise the greatest possible quantity from a certain plot of ground, but to obtain as large a quantity of useful good things at the least possible expense; for when an article costs more to produce it than it will fetch in the market of the world, it ceases to interest the producer, in spite of all that political economists can say to the contrary. Although the cottager, by dint of labour at his over-hours, may obtain Lettuce and other things for his own table underneath his Apple trees, he could not obtain a livelihood by employing his time solely in such oc-

cupation. Neither will it answer the purpose of the large cultivator to do so, except under peculiar circumstances, where ground is very scarce.

I cannot conclude this article without complimenting those cottagers who so industriously make the most of their little plots. I am glad to hear, in many quarters, that much encouragement is given to cottage gardening by spirited landed proprietors and others; and, although I have expressed some doubts of the profitableness of attempting cultivation on a large scale underneath trees, I have no doubt whatever of the benefits likely to result from prizes given to a meritorious cottager, or in any other way rewarding the industrious cultivator of the soil. The notice taken of, and remuneration given to, a deserving cottager may, in many cases, be regarded as so much seed committed to the earth, which, in due time, is returned to the sower manifold.

J. ROBSON.

THE MINIATURE GREENHOUSE.

(Continued from page 255.)

I TRUST my young friends will have carefully read and digested my two former papers on these interesting tiny plants, and will have got ready the soil and pots in which to grow them. I now proceed, as I promised, to give a list of such plants as are fitted for this peculiar purpose. Unfortunately, I cannot give information where they may be obtained, but I know where they may be seen in considerable numbers,—namely, at the gardens at Kew, the Botanic Gardens at Oxford, and a few at most of the Botanic Gardens in the kingdom. Some kinds may be obtained at the nurseries round London. The Messrs. Lee, at the Hammersmith Nursery, had formerly a very fine collection of these dry stove plants, but I do not know whether they keep the stock up now, or not; I suspect they do not pay, or, in other words, the sale for them is very limited, because, now-a-days, plants that flower freely, and are more easily cultivated, are more in demand. Let the owners, then, of miniature greenhouses make inquiry, and search for the plants suitable for this purpose at the places I have indicated; and, by propagating them, they will soon have a sufficient number to fill their pots and shelves.

CACTI.—The real Cacti are all too large, but the subgenera *Mammillaria* furnishes the following:—

- C. caryocanthus* (yellow-spined).
- *densa* (close-growing).
- *glomerata* (tufted).
- *prolifera* (white-spined proliferous).
- *pulchra* (pretty).
- *pusilla* (small).
- *stellata* (starry).

EPIPHYLLUM CLASS:—

- C. truncatum* (truncated).
- „ *Russellianum* (Duke of Bedford's).
- „ *violaceum* (violet-colour-flowered).

These last require more heat and larger pots as they grow than the former.

COTYLEDON CORUSCANS (glittering).

- C. interjecta* (cast-down).
- *Lievenii* (Lieven's).
- *sempervivum* (houseleek-like).

CRASSULA ALBIFLORA (white-flowered).

- C. ciliata* (hair-fringed).
- *coccinella* (small-scarlet).
- *concinna* (neat).
- *lactea* (milky).
- *orbicularis* (round-leaved).
- *rosularis* (small-rosy).

HAWORTHIA.—This genus has been separated from

the Aloe, and is named in honour of A. H. Haworth, Esq., a distinguished English botanist.

- H. altissima* (ridge-lined).
- *angustifolia* (narrow-leaved).
- *arachnoides* (cobweb-like).
- *brevis* (short).
- *concinna* (neat).
- *erecta* (erect-pearl).
- *fasciata* (banded-pearl).
- *multifaria* (many-sided).
- *obtusa* (small-blunt).
- *Reinwardti* (Reinwardt's).
- *tesselata* (dark-checked).
- *venosa* (veiny).

T. APPLEBY.

(To be continued.)

BLACK EAGLE GRAPE.

ON visiting a neighbouring gardener the other day, this Grape was pointed out to me, and, from what I saw of it, I arrived at the conclusion that it would prove a capital sort for amateurs; two Vines, in 16-sized pots, had on each of them five or six rather good-sized bunches, as black as they possibly could be, without the least sign of shanking. The canes could not be much thicker than an ordinary straw. My friend informed me it is one of the surest-bearing Grapes in cultivation,—seldom, under the most adverse circumstances, missing a crop. Its character resembles a *Frontignan* more than any other kind I am acquainted with. Whether it is a new kind, or only an old one with a new name, I am not in a position to say. Be this as it may, it only requires to be more known to become extensively grown by people with limited means at command. Regarding the flavour, I cannot offer any opinion, not tasting the fruit.—JOHN EDLINGTON, *Winch House, Seacombe*.

[We do not know this Grape by the name assigned. Send a bunch to the Pomological Society's next meeting.—ED.]

YUCCA GLORIOSA.

THIS fine, tropical-looking plant is not half so much patronised as it deserves to be; for, independent of the rigid uniform appearance its foliage always presents, no flowering plant, that I am acquainted with, can equal it for length of spike and number of florets expanded at one time. It is true, they do not flower well in every situation; but, where they do succeed, no plant of late introduction gives so distinct a feature as this Yucca. At this place (Linton Park) they thrive and flower as well as in most places. One spike, that flowered in the early part of July, I took the trouble to examine, and found it consisted of 746 separate florets on thirty-nine spikelets; the total height from the ground being a little over ten feet, and from the base of the lowest spikelet to the tip was nearly seven feet, and at the time when it was at its best there were at least six feet of this stem densely covered with expanded blooms all at once. No Hollyhock, that I have ever seen, can equal this. I believe we had one still larger than this in flower, three or four years ago; but I did not take any particular notice of it at the time, and am only induced to record this at the instance of a friend, who reports this spike to be an unusually fine one.

I hope others, having fine plants of any kind, flowering or fruiting out of the ordinary way, will likewise record them.—J. ROBSON.

SWIMMING POWER OF THE ADDER.—As Mr. Partington, hairdresser, of Nantwich, Cheshire, and his friend were fishing in the canal, about a mile from the above place, they were suddenly surprised by seeing a viper, or adder, swimming across it, with its head and tail just out of the water, making its way as rapidly as though it were running on land. Mr. Partington immediately detached the thick portion of his rod, and, on its coming to the canal's bank, struck the viper, and killed it. It was a large specimen, being upwards of two feet in length. This will tend further to confirm the fact, that vipers will take water, and also that they are good swimmers.

NOTES ON THE DEVELOPMENT OF BULBS AND TUBERS.

By THILO IRMISCH.

(Abridged from the German original.)

(Continued from page 296.)

Iris Persica, L. *Iris Xiphium*, L.

THE flowering bulb, which possesses at its base a small dry stump, the remains of the last year's peduncle, is clothed externally with numerous very thin dry skins. These are followed from their base to the height of from one to one inch and a half by about five scales (Fig. 1, a), which are already quite dry as far as the upper margin, where they are marked by a scar. Then follow from seven to nine broad fleshy scales, whose tips are yet perfect.

As regards the height of these, it may be remarked that the lower decrease gradually in length, and this decrease extends from the first to the fourth or fifth; then they increase again in a higher ratio, so that the uppermost is the largest; the upper ones, however, are thinner and more membranaceous. Buds occur in the axils of the lower of these leaves whose tips are still perfect (and, indeed, though not so regularly, in the axils of the lower scales), and the size of the buds is in an inverse ratio to that of the mother leaves, the largest bud being found in the axil of the smallest scale (the third, fourth, or fifth). A rather small bud occurs also in the axil of the next somewhat larger scale; the axils of the three or four upper scales are barren.

The axis is very short, so far as it is studded with the above-mentioned scales, which alternate with tolerable regularity, and have no closed sheath; from this arise a few slightly-branched roots, piercing the base of the scales. In immediate continuation of this main axis rises a rather short stem (three-

quarters to one inch and a half high), which bears from four to six leaves, separated by very short but perfectly distinct internodes, above which are two membranaceous leaves, which surround the terminal blossom. Blossoms also frequently occur in the axil of the last and last leaf but one; at the base of their stem a membranaceous bract is found turned with its back to the main axis, and at the tip of which, as in the terminal flower, are two membranaceous leaves. These blossoms often remain rudimentary, or are entirely abortive.

The bulbs are formed from the above-mentioned axillary buds, of which, however, the largest only blow the following year. These buds are constructed as follows:—The outer leaf has two angular keels; with it in general there are at the most three rather membranaceous scales. Then follow three or four leaves which are developed at the time of the flowering of the parent bulb, and whose blades afterwards wither, while their fleshy base remains; then follow scales.

The arrangement of the appendages on one and the same axis is as follows:—

1. About three membranous scales, which soon dry and invest the bulb.

2. About five leaves whose blades perish, but whose bases serve to form the bulb.

3. From seven to nine scales, which also help to form the bulb, and in whose axils especially buds destined to produce the new bulbs are formed.

4. From four to six leaves, which are seated on the common flower-stem.

5. Two membranaceous leaves, which form the involucre of the terminal flower.

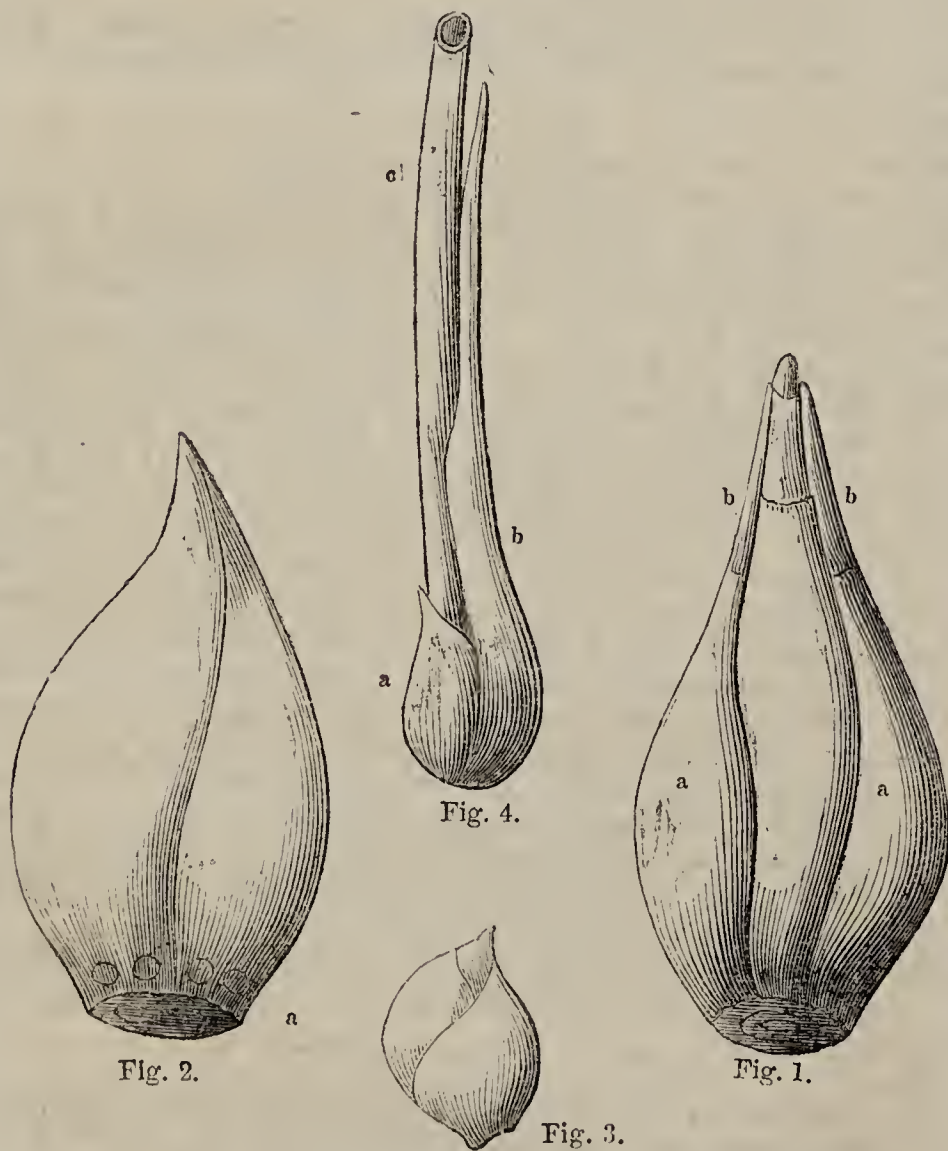
The transition from one to two is rather gradual, as also from two to three, but less so from three to four.

While the new bulbs are forming, the contents of the parent bulb are gradually absorbed; it is no longer requisite when the former have attained their full growth, and it dies off completely. The ripe bulb is also represented by leaves (independent of the axillary buds) which belong to a single axis.

The bulbs of *Iris Persica* differ from those of the Tulip, in that their main axis produces leaves (No. 2), from that of the Hyacinth and Lily in the short duration of its parts, and from that of *Tigridia pavonia*, in that the main bulb is not seated immediately at the base of the peduncle, but in its stead many other leaves.

Iris Xiphium bears a great resemblance to *Iris Persica* in the structure of its bulbs. In a state of rest (at the end of summer or in autumn) the outermost scales are dry and membranaceous, followed by fleshy scales, which have no closed sheath, and which are still perfect at their tips (Fig. 2); their margins also are not separated from one another, but that of the one is wrapped for a short distance over that of the other, by which character the bulb of this species may be distinguished from that of *I. Persica*, with which it agrees in size.

In spring from about eight to ten leaves, arched backwards, grow above the sheaths, which extend a little, so that the uppermost of them is the longest, and which, like the next below it, is far more membranous than the others which contain the nutriment, that is gradually absorbed. A few of the leaves grow at the base of the peduncle, but the others, separated by tolerably large internodes, are disposed on the peduncle, which is about a foot high, and is terminated by a flower, near which another breaks forth. Buds occur only in the axils of the scales, and not in those of the leaves; the lower are smaller, the upper larger. Two modifications of the buds or young bulbs occur in cultivated specimens. The larger (Fig. 3), which



Iris Persica and I. Xiphium.

IRIS PERSICA.

- Fig. 1. Bulb in a state of rest. | b. dried portion of scales of
a. fleshy portion of its scales. | bulb.

IRIS XIPHIMUM.

- Fig. 2. Bulb from which the dry coats have been removed. | the successive scales.
a. rudiments of filiform roots. | Fig. 4. Young bulb in axil of second and third scale.
Fig. 3. Young bulb in axil of highest scale, showing | a, b. their sheathing scales.
c. leaf.

are seated in the axil of the highest scale, are formed at the time of the flowering of the parent bulb, in June, merely of sheathing scales. The first, in the usual position, is quite membranaceous, and becomes at a later period a brown skin. The second is of the same nature, while the third and those which follow are very fleshy. No leaves are at present visible. The bulbs in the axils of the second and third scales, reckoning from above (Fig. 4), are formed of one or two thin sheathing scales (a and b), which are followed by from one to three leaves (c), whose cylindrical blade, like that of the leaf of a non-flowering bulb of *Ornithogalum nutans*, is fully developed at the time of the flowering of the parent bulb; these leaves are followed by some short sheathing scales, a structure near to that of the buds of *Iris Persica*.

The lower buds seldom come to perfection. Here also the whole of the parent bulb perishes after flowering.

Convallaria majalis, L. (Lily of the Valley.)

The dried leaves of the previous year are still visible in spring, and involve the base of this year's plant. Next to these follow from four to six sheaths, closed in front, of which the inner constantly project beyond the outer. Then follows a small membranous sheath, in front of which is the peduncle, which produces no leafy appendage below; but the first bract above bears in its axil the first flower. No bud is found in the axil formed by the above-mentioned scale and the peduncle. On the other side of the peduncle the two or three new leaves are seated, of which the first, or outermost, does not stand with its back to the peduncle, but obliquely. Occasionally the leaves do not stand immediately close to the peduncle, but are involved in a long sheath, which then is turned with its back towards the peduncle.

The leaves are furnished with long closed sheaths. At the base of the sheath of the innermost there is already in spring a little bud. If this is examined again in autumn, it shows completely the same organisation as the plant in spring above described, only everything is undeveloped; it is, then, especially clear, that the scale immediately before the peduncle involves with its borders not merely the peduncle, but also the still rudimentary leaves which stand upon the other side of it.

Besides the main bud, another far smaller is found normally in the sheath of the inner leaf near the main bud, where the margins of the first sheath are united to each other. Even in spring this is still very small when the main bud is ready to flower; it is formed of many sheaths, and generally remains undeveloped.

Besides these buds with undeveloped internodes, there are formed on the knots of the underground creeping axis lateral axes, whose first internodes which produce sheaths are strongly developed. At the tip of these runners the above-mentioned organisation is repeated with undeveloped internodes.

The order of the parts in the basal axis agrees in essentials with that in the *Amaryllideæ*; for there, as here, the peduncle is lateral, while the primary bud is terminal. The disposition of the leaves on the basal axis is, however, different, as for instance in *Amaryllis formosissima*. In this only leaves occur, whereas in *Convallaria majalis* a number of sheaths stand immediately below the peduncle, and below and on the outside of these the two or three leaves, which are developed a year before the evolution of the peduncle which those sheaths surround, and which at the time of flowering are dried up. The new leaves, which a short time before the appearance of the flowers of *A. formosissima* come out near the peduncle, may be compared with the new leaves of *C. majalis*, so far as they stand in either case on the basal axis above the peduncle, and belong, therefore, properly to the next peduncle. In the case in which a sheath appears first above the peduncle, in *C. majalis*, this has the same position, with respect to the peduncle, which the long-sheathed leaf which answers to it has in *A. formosissima*. *C. majalis* agrees with *Leucojum* in the circumstance that both sheaths and leaves occur on the basal axis; but they disagree in their mode of arrangement.

Galanthus nivalis, L. (Snowdrop.)

The bulb at the time of flowering is constructed as follows:—On the outside are found a few very thin and dry brown coats. After these are removed, a white, fresh, sheathing scale appears, with the margins united; rather fleshy, but of a looser

texture on the inner side, about half an inch long (Fig. 1, a). The upper margin is marked all round by a scar. The new roots form a circle at the base. From the orifice of this fleshy coat projects a long sheathing scale (e), which involves the peduncle (h), and two leaves (f, g), and generally, but not always, a second shorter scale (m) of a lateral bulb, from whose mouth projects the tip of one or two leaves (n), but

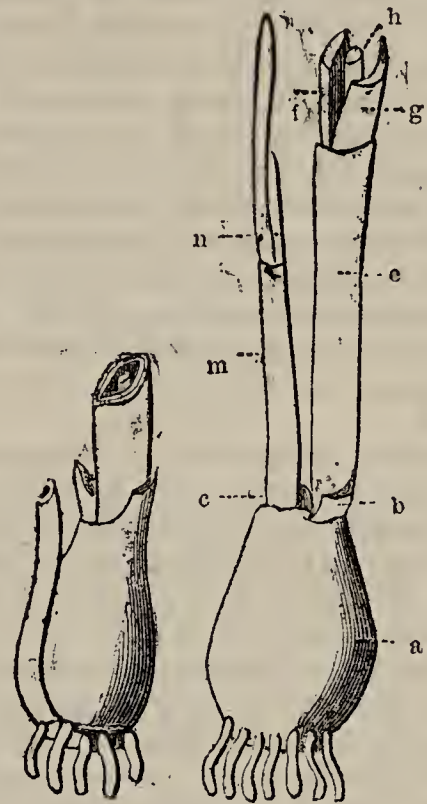


Fig. 1. Fig. 2.

Galanthus nivalis.

Fig. 1. Bulb at the time of flowering.

- a. outer coat of bulb.
- b, e. first and second scale.
- c. long sheathing scale.
- f, g. leaves.

- h. peduncle.
- m. sheath of lateral bulb.
- n. leaf of ditto.

Fig. 2. The same with the outer coat removed.

no flower-stem. The withered tips of two scales (b, c) also peep forth from the same common orifice. If the fleshy coat is now removed, besides the lateral bulb we perceive two scales, also closed in front (Fig. 2), but having the scar confined to the small portion projecting beyond the rest. These also involve the base of the peduncle.

After the second scale is removed, there appears a broad, rather thick, and fleshy scale, which has a scar on its upper margin. It is pressed to the base of the sheath which surrounds the two leaves and the peduncle, and which has its margin sometimes quite equal, but sometimes furnished with a short blade-like appendage. In those bulbs which are not flowering for the first time the remains of the old peduncle are visible between the scale and sheath. The two closed coats, the scale, and the old peduncle, are formations of the previous year.

The parts of this year's plant are as follows:—

1. The elongated sheath (e), in whose axil are the first rudiments of a bud, from which in the next year the lateral bulb is formed.

2. The outer leaf (f). It has a closed sheath, and the back of its blade is turned to the last year's peduncle, and is opposed to the fleshy scale (c), which stands before the flower-stem. It appears, then, that the sheath (e) preceding the first leaf, and enclosing it, alternates with the scale (c), the uppermost formation of the past year. This is also confirmed by the case in which a short lamina terminates the sheath; this blade is situated on that side of the orifice of the sheath which is turned away from the last year's peduncle and the scale standing before it.

3. The second inner leaf (g). This has no closed sheath, but its fleshy base is somewhat expanded. In the axil which it forms with the peduncle (h) nothing is found. A young bud, however, is situated on that side of the peduncle which is turned away from this leaf.

The question now arises, what position this bud occupies with respect to the neighbouring parts—the laminar side of the first or lowest leaf (f) and this year's peduncle (h). As regards the position of the sheath with respect to the bud, this is uncertain when its margin is of equal height all round.

But if the blade-like appendage be produced, we perceive at once that it is turned with its back from the flower-stem, and towards the first leaf. If, then, we suppose that this young bud stands in the axil of the first leaf, its position is very peculiar, for then the first leaf of the bud stands before the parent leaf; whereas, for the most part, in Monocotyledons, and also in Dicotyledons, it stands before the axis, and alternates with the parent leaf. Such a position is the more surprising in the Snowdrop, since the lateral bulb has quite the normal position with respect to its parent leaf. It appears, however, that a border, though extremely small, proceeds from the lowest lateral margin of the upper leaf which encircles the bud, indicating that the bud cannot belong to the axil of the lower leaf; indeed, the upper leaf often encircles the bud with the lowest portion of its margin, though only slightly. On the whole, then, we come to the conclusion that the first leaf of the bud must be regarded as next in succession to the upper leaf (g), with which it alternates; that the bud is terminal; and that the peduncle is in the axil of the upper leaf (g).

If we now examine further the structure of the bulb, we find that the upper portion of the sheath (c) of this year's plant dies and disappears, while the lower remains as a reservoir of nutriment. It then becomes the outer coat of the bulb (a), closed all round, and showing a scar, above and from whose axil the lateral bulb is developed. The first leaf loses only its lamina, and becomes the sheathing scale (b), which has a scar at one point only of its upper margin; the blade of the second leaf likewise perishes, but its base remains, and forms the fleshy scale (c). The corresponding parts of the former year's bulb are entirely exhausted, and are reduced to dry skins.

The composition of the Snowdrop bulb is, so far, quite simple, that at the time of flowering only the basal parts of the last year's growth are fresh, but those of the former year completely perished. In this respect it is like the bulb of *Ornithogalum umbellatum*. It, however, deviates remarkably from this and the other Liliaceæ and Irideæ, which have been described in the position of the main bud and other points. Sterile plants have also generally two leaves, which are contained in a sheath. The second leaf has also a closed sheath in which the young bud is enclosed, whose first leaf alternates with the second leaf.

The spathe, out of which the blossom bursts, is originally formed of two leaves, which, however, at length become confluent.

(To be continued.)

HYDRAULIC RAMS.

THE dry weather and harsh winds which the gardener has had to contend with this season, has rendered it absolutely necessary that water should be copiously and regularly applied to certain plants and crops, which, if left without such artificial aid, would die under the combined effects of solar influences, and an atmosphere possessing an unusual amount of dryness. Nor is this requisite confined to the gardening world; domestics have severely felt the want of an abundance of that water commonly denominated soft, and which is rich in all chemical ingredients essential to the well-being of vegetable life. This want, in some instances, has been removed by the construction and use of that useful of all hydraulic inventions, the ram, which, when properly fixed and superintended, will respond to every demand, if a supply is at hand to work its simple but ingenious machinery.

As many may be induced to provide against a repetition of such extremes of drought, as was experienced in some localities this season, I think a few hints on the fundamental principles to be observed in the process and *modus operandi* of fixing, may be acceptable to those who wish to dispense with the services of a professional civil engineer; such a personage not being required where the gardener has, among his other acquirements, obtained a knowledge of the rudiments of hydrodynamics. Of all these engines, none can equal the power and regularity of the improved hydraulic ram of Roe; not as a thing absolutely new, but as an extremely useful auxiliary to that vitally essential adjunct to every establishment, a good supply of water. The immense

expenditure of both time and money, in the laborious operation of pumping and drawing water is incalculable; in many places too, where, at a short distance, a large volume of the fluid is running to waste without affording to the possessor the slightest benefit. In such places, or wherever a fall of a few feet can be obtained from the head of water, and the means of providing for the escape of the water, a ram of this description will afford a constant supply without the least manual assistance.

The improved ram of Mr. Roe's invention is composed of a square box,—say fourteen inches long, and three inches and a half square,—one end of which is attached to a pipe leading from the head of water, at the other end being a valve, called a pulse-valve. On the top, at about the centre of this box, an air-vessel is fixed. Between the square box and the air-vessel, there is a valve, as well as another in the neck of the air-vessel, for supplying it with fresh air. The ram being ready for action, the water descends, being let down through the pipe, which causes the pulse-valve to close. The sudden close of the latter causes the water to retreat back again for a short space, which again permits the opening of the pulse-valve, by the pressure of the atmosphere upon it; the water returning causes it again to close; it again retreats, and this constant motion causes the action of the ram. At each pulsation a small portion of water is admitted into the air-vessel, where the air, being compressed by admission of the water, drives the latter up through a small pipe attached to the air-vessel, to a height of one hundred, a hundred and fifty, or even three hundred feet, according to the fall which can be obtained. In laying this ram, experience has proved that the pipe supplying the ram from the filtering chamber should be four inches diameter of bore, while that which gives the supply from the ram should not exceed one inch and a half, nor under one inch diameter of bore. The former pipe should be composed of the best hardened lead, or combination of such metals as lead, zinc, &c.; the latter pipe may be of the same material, or lead; and for economic purposes, a gutta percha pipe, cased in cement where it passes through a distance of ground; and by no means, as is too often the case, should iron pipes be used. Corrosion and many other evils have with them destructive effects. To give an idea of the power of this improved engine, we may state, that with a fall of twelve feet, water can be raised fully one hundred and fifty feet; in fact, a supply of water can be obtained at the top of England's loftiest castles, with the trifling fall of six feet.

It seems that the principal object in the improvements effected of late years has been to simplify the construction of the machine, so that in the event of an accident any ordinary workman may repair it on the spot. But in repairing, as in laying the ram, great care and precision are necessary. Anyone having a knowledge of the principles of hydraulics, and can reason with the fixed laws of the same, will find the laying of an hydraulic ram, of whatever patent, no difficult task. Ill success in the matter will only arise, as it too often does, by trusting too many of the small but important items to ignorant and disinclined workmen.—J. RANSLEY TANTON, *Gardener to H. O. Nethercote, Esq., F.H.S., Moulton Grange.*

PLANTS IN THE KALAHARI DESERT— CENTRAL AFRICA.

(Continued from page 293.)

THE Makololo cultivate a large extent of land around their villages. Those of them who are real Basutos still retain the habits of that tribe, and may be seen going out with their wives with their hoes in hand; a state of things never witnessed at Kolobeng, or among any other Bechuana or Caffre tribe. The great chief Mosleshi affords an example to his people annually, by not only taking the hoe in hand, but working hard with it on certain public occasions.

The Makalaka cultivate the *Holcus sorghum*, or Dura, as the principal grain, with Maize, two kind of Beans, Ground-nuts (*Arachis hypogæa*), Pumpkins, Water Melons, and Cucumbers. They depend for success entirely upon rain. Those who live in the Barotse valley cultivate in addition the Sugar-cane, Sweet Potato, and Manioc (*Jatropha manihot*). The climate there, however, is warmer than at Linyanti, and

the Makalaka increase the fertility of their gardens by rude attempts at artificial irrigation.

The instrument of culture over all this region is a hoe, the iron of which the Batoka and Banyeti obtain from the ore by smelting. The amount of iron which they produce annually may be understood, when it is known that most of the hoes in use at Linyanti are the tribute imposed on the smiths of those subject tribes.

The forests became more dense as we went north. We travelled much more in the deep gloom of the forest than in open sunlight. No passage existed on either side of the narrow path made by the axe. Large climbing plants entwined themselves around the trunks and branches of gigantic trees like boaconstrictors, and they often do constrict the trees by which they rise, and, killing them, stand erect themselves. The bark of a fine tree found in abundance here, and called "Motuia," is used by the Barotse for making fish lines and nets, and the "Molompi," so well adapted for paddles by its lightness and flexibility, was abundant. There were other trees quite new to my companions; many of them ran up to a height of fifty feet of one thickness, and without branches.

In these forests, we first encountered the artificial beehives so commonly met with all the way from this to Angola; they consist of about five feet of the bark of a tree fifteen or eighteen inches in diameter. Two incisions are made right round the tree at points five feet apart, then one longitudinal slit from one of these to the other; the workman next lifts up the bark on each side of this slit, and detaches it from the trunk, taking care not to break it, until the whole comes from the tree. The elasticity of the bark makes it assume the form it had before; the slit is sewed or pegged up with wooden pins, and ends made of coiled grass-rope are inserted, one of which has a hole for the ingress of the bees in the centre, and the hive is complete. These hives are placed in a horizontal position on high trees in different parts of the forest, and in this way all the wax exported from Benguela and Loanda is collected. It is all the produce of free labour. A "piece of medicine" is tied round the trunk of the tree, and proves sufficient protection against thieves. The natives seldom rob each other, for all believe that certain medicines can inflict disease and death; and though they consider that these are only known to a few, they act on the principle that it is best to let them all alone. The gloom of these forests strengthens the superstitious feelings of the people. In other quarters, where they are not subjected to this influence, I have heard the chiefs issue proclamations to the effect, that real witchcraft medicines had been placed at certain gardens from which produce had been stolen; the thieves having risked the power of the ordinary charms previously placed there.

This being the rainy season, great quantities of Mushrooms were met with, and were eagerly devoured by my companions; the edible variety is always found growing out of ant-hills, and attains the diameter of the crown of a hat; they are quite white, and very good, even when eaten raw; they occupy an extensive region of the interior; some, not edible, are of a brilliant red, and others are of the same light blue as the paper used by apothecaries to put up their medicines. — (*Dr. Livingstone's Missionary Travels.*)

QUERIES AND ANSWERS.

GERANIUMS IN POTS WITH OVER-LUXURIANT ROOTS.

"This summer I have plunged three dozen fancy Geraniums into pots, in the borders of a small court garden I have at the back of my house. They have done very well, and are still blooming on; but this morning I had occasion to remove one of them to another part, when I found the roots were coming through the pots, and into the soil beneath. I shall, therefore, feel obliged if you will instruct me how to proceed when I take them up. I have also another lot of fancy ones, planted out of the pots, in the same borders. Shall I cut them down before I repot them? and will the roots require any trimming?"

"I have not noticed anything in the last four or five volumes of *THE COTTAGE GARDENER*, nor in the *Manuals*, bearing on the subject."—JNO. D. B.

[We advise you, when you take up your Geraniums, to lift them carefully, cutting off all the roots that have pushed through the pots, and to place them in a shady place for a fortnight, giving them plenty of water until they recover. Then turn them out of the pots. Cut in the tops severely, shake off the greater part of the soil, and trim in the roots sufficiently to get them easily into the pots again. Then repot them in the same pots, and place them under a frame, or pit, giving but slight waterings till fresh roots and shoots are produced. Then water more freely, and place them in your greenhouse through the winter, stopping them occasionally to make them bushy. Treat those you have planted out of their pots in the same manner. By doing so, you will renovate your plants and have them in good condition to plant, or plunge out, next season. If you wish to bloom them in their pots, previous to planting out, they will be benefited by a shift into larger pots next March or April. Use fresh loam three parts, and one part of well decomposed hotbed dung.]

PANSY MANAGEMENT.

"Wishing to grow some kind of florists' flower in a very circumscribed space, within a couple of miles of King's Cross, and being engaged in my professional duties from eight till six o'clock, so that no flower which wanted much attention would suit me, I fixed on the Pansy for my love, and bought a couple of dozen of the best varieties, which I placed, about the end of May, in a carefully prepared bed. This bed is exposed to the morning sun, but, at about one o'clock, is shaded by the house. The plants seemed strong and healthy enough; but after flowering a little, finding the flowers began to be inconstant in colour, I cut them down, and strewed a little rotten manure over them, hoping to obtain fine autumn blooms. I have kept them well, but I think not too much watered. I now find that about half a dozen of them are rotting off. I have pulled one up, the whole root of which seems quite decayed. Can you give me any idea what this arises from? and how it can be remedied?"

"I should also feel obliged by your informing me what number of first-rate varieties I may hope to get from about 500 seedlings, said to be from the choicest varieties, assuming they are what they purport to be. If you could conveniently add a few hints to guide me in Pansy growing, I should feel obliged. I may state, that I live on the west side of Highgate Hill, and that the natural soil is very stiff, and very soon dry after rain. Will you further oblige me by giving the names of a few flowers in each class?"—ZENAS.

[The cultivated Pansy is little better than an annual, and therefore, must be propagated by cuttings, or layers, every year, and the old plants destroyed as soon as they have done flowering. Your plan of cutting them in, expecting to have an autumn bloom, was not a good one. Your bloom would have been prolonged better, if you had layered the shoots just as you would have layered a Carnation. The layers would have made you fine plants for next year, if you had taken them up, potted them, and kept them through the winter in a cold frame, sheltered from frost by a covering of garden mats. Though the Pansy will live through ordinary winters without any protection, yet it is not a safe practice, for many will perish if not sheltered. All the great florists keep their stock of young plants under glass through the winter. If you had wished to keep what sorts you have, you ought to have propagated them by cuttings in June, in order to have good plants early in autumn.]

The Pansy is subject to die off just at the point between the root and the top, as some of yours have done, and, we are sorry to say, no remedy has yet been discovered, either to prevent, or cure, that disease. All that can be done is to keep a stock in a reserve bed, and as soon as any plant appears diseased, to remove it immediately with all the soil in which the diseased plant has grown, filling up the hole with fresh soil, and replanting in the place a healthy plant from the reserve bed.

Your 500 seedlings may or may not produce a single flower worth preserving. Seed so purchased is always doubtful. A more certain way is to save your own seed from your own best and finest varieties, choosing the most perfect flowers for the purpose. Every seed-pod so chosen ought to be marked with

a small piece of thread, or else every other bloom should be cut off as soon as the flowers fade.

We are proving the new varieties of Pansies, and shall give a list very shortly of such as are really good.

The situation of your Pansy bed is not the best. They do not require shade. Have you not space in your garden for the bed in a more open place?]

LARGE CAMELLIA IN THE OPEN GROUND.

IN my article on large specimens of the Pinus, &c., at pages 246 and 247, allusion is made to a fine Camellia that was growing with them. This article, it is proper to say, was written and intended for the pages of THE COTTAGE GARDENER in the early part of March last; and the dimensions, and other features of the trees described, were made by an inspection of them at that time. Since then, the collection has been broken up by the sale which took place. My worthy employers became the purchasers of the large Camellia, which was removed to this place (Linton Park) in the latter part of March, and planted in the grounds. As my description of it at the time was, to a certain extent, imperfect, I herewith correct it, in order that others who have large Camellia plants may compare it with them.

As I have before stated, the tree had been fully exposed to all weathers for thirty years or more, a slight protection being given to it at certain times when in flower. Therefore, the hardihood of it has been fully established, while it is as densely clothed with foliage as a Portugal Laurel, and each tip loaded with bloom-buds. But, as we removed it just at the time these were about expanding, it was determined to pick them all off, to relieve the tree: a considerable quantity was at once taken off, they being in clusters of half a dozen and more together, like clusters of nuts: but, after taking off a part, I determined to count the remainder, and I found them to be 8,500! It is, therefore, beyond a doubt, that the tree had 10,000 bloom-buds on it when we received it; and, in other respects, was as perfect a specimen of the old double white variety as could be met with anywhere, it being of a low beehive shape, compact, and densely clothed with foliage of a deep green colour.

Perhaps some will be asking how it looks now. To such I may say, that, like most evergreen shrubs which have been transplanted, it does not look anything near so well as it did in its former abode. But I am in hopes, after two or three years, it will recover its wonted flourishing condition.

It has been planted on the lawn here, and, though a slight canvass shading has been put over it, to protect it from the fierce glare of a midsummer sun, it is intended eventually to let it be quite exposed as before.

To those who may wish to enquire the character of the locality this fine plant came from, I may say, that the situation was rather elevated than low, the district being hilly; and the soil a pale-coloured, sandy loam, far from a dry hungry one; on the contrary, the moss-grown condition of the hedges, and many kinds of fruit trees, indicated the presence of water in greater abundance than suited the well-being of everything. But the condition of the water, I have reason to believe, told as much as anything the secret of the success attending certain things grown there; for I found some of the ditches, which received the water from an adjoining plot, to be so much charged with iron, as to crust over the bed of the stream a bright red colour. I expect the ground this Camellia was growing on was kept moist by water so constituted, and I have no doubt its well-being was owing, in a great measure, to the presence of this fluid, the soil being in like manner charged with the same substance, for it could not be otherwise. I may here remark, that I believe many of our failures in cultivating plants in an artificial manner arises from our mixing ingredients together that are hostile to each other, or, what is the same thing, supplying them with water diametrically opposite to the kind they require; and I fear we shall have some difficulty to keep the Camellia in health where we now have it, owing to the natural soil of the district, as well as its water, being exactly the reverse in its component parts to the one it came from. Auxiliary matters were supplied of course; but the action, or utility, of these is always much crippled by their maintaining a sort of warfare with hostile elements

surrounding them. Peat and chalk may blend mechanically, but not chemically, and so it is with many things else. No amount of artificial skill can mix substances in those exact proportions to produce a material so exactly suited to the wants of certain plants, as some soils are by nature. Hence the difficulty of getting Camellias to thrive everywhere, so well as the one in question did at Brenchley,—not Brushley, as stated in my former article. But those having trees of this kind inured to the open air, will, perhaps, be kind enough to describe their size and condition, in order that we may learn what chances there are of this noblest of all flowering evergreen shrubs being found growing out of doors: I will, in return, explain the means we took to remove it, and other matters too long for the present article.—J. ROBSON.

CAUSE OF DOUBLE FLOWERS IN STOCKS.

I CANNOT quite agree with either of your correspondents, "T. A." and "T. S.," as to the cause of double flowers in Stocks. There are, as I have no doubt you will remember, two modes of producing double flowers, and I am inclined to think there is some truth in both methods. Glenny says, that,—if the young plants are grown strongly at first, and then put on a low diet, keeping them almost free from water, until they droop and turn yellow,—when excited into growth and made to flower, double flowers are produced.

The other is the discovery of a Frenchman, whose name at this moment I forget. He says, "that, if care is taken in selecting seeds from those pods only which are found in pairs on the stem and near the top, that the result is double flowers."

Last autumn I gathered seeds from pods so placed; and, this summer, every plant that has bloomed is double. Whether this result is due to the seeds, or to the hot, dry spring and summer—the dry weather having reduced the plants to the Glenny state—further experience must decide.

Have you, or any of your subscribers, noticed a frost, or results that seem due to a frost, in this part of east Surrey? The tips of the Dahlias, common Laurel, Deodar Cedar, Apple, and other trees, are burnt and withered, as though by a sharp frost.—J. C.

TO CORRESPONDENTS.

STRAWBERRY CULTURE.—*Minna* need not fear for the crowns of her plants. Let the manure (of the richest quality) be placed six inches thick round the plant, and as near as possible to the crown without actually touching it. The wall thus formed round the crown will protect it from cold winds during March, and the showers of April will soon reduce it so much in height, that there can be no practical inconvenience. Care must be taken that birds do not throw the manure all over the plants.—H. C. K.

THE PRICE OF HONEY.—Some years ago I lived in Dorsetshire. The price of honey then and there was the same as butter. A quart of cream, a pound of honey, and a pound of butter, were of equal price. Butter was the standard of value. I think, notwithstanding the high prices sometimes mentioned, that one shilling per pound is as much as the cottager will generally get.—J. C. Honey in this neighbourhood (Dallington, Sussex) is tenpence per pound; excellent fresh butter, tenpence per pound; new milk, threepence per quart; and eggs, one shilling per dozen.—B. P. BRENT.

DEPOSITING MONEY (A. B.).—We know nothing about the Society named by you; and never advise how money should be invested.

NAME OF PLANT (W. J.).—Your plant is the *Erysimum cheiranthoides*, or Treacle Worm Seed, rather uncommon in a wild state.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 18th. AIREDALE. Hon. Secs., J. Wilkinson and T. Booth Shipley.

AUGUST 28th. HALIFAX AND CALDER VALE. Sec., Mr. Wm. Irvine, Holmfild, Halifax. Entries close August 14.

SEPTEMBER 8th. LIVERPOOL AND MANCHESTER.

SEPTEMBER 14th and 15th. SPARKENHOE (at Tamworth).

SEPTEMBER 21st and 22nd. BRIDGNORTH. Sec., Mr. Richard Taylor, Bridgnorth. Entries close the 15th of September.

SEPTEMBER 21st and 22nd. LICHFIELD.

SEPTEMBER 26th. PAISLEY. Entries close Sept. 18. Sec., Mr. Wm. Houston, 14, Barr Street.

OCTOBER 7th and 8th. WORCESTERSHIRE. Sec., Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

OCTOBER 13th and 14th. CREWE. Sec., D. Margetts, Crewe. Entries close 30th September.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakey.

N.B.—Secretaries will oblige us by sending early copies of their lists.

CRYSTAL PALACE POULTRY SHOW.

WE are like the charity children, when they get their annual treat and go to the Crystal Palace,—we are sorry it is over. But before they get into school the next day, they are looking forward to next year and the next treat. So are we, and more fortunate than our young friends, we have two treats in the year—one in summer, one in winter. Why should they not have the same? We cannot account for the eccentricities of the human character; and, incredible as it may appear, there are some people who are not poultry amateurs. There are those who are moved to enthusiasm by the sight of a nondescript teapot, fine handle and spout; others who would rival the ancient Egyptians in their animal worship, if the Deity assumed the form of a bloated and obese lap-dog, or a darling pug, and yet who look coldly on poultry. When the Show was formerly held, such amiable enthusiasts compelled to pass through the Exhibition of our beautiful birds, and, consequently, to elbow us in their transit, and to disturb our admiration of *our* pets, spoke disparagingly of them. This was a grievance, and the new direction of the Crystal Palace is entitled to the best thanks of the poultry public for having given them a proper place. The entire length of the north wing being devoted to them, enabled Mr. Houghton to arrange a single row of pens on each side, allowing ample room for spectators, and as much ventilation as could be desired. There was, of course, a space wider than half our streets between the rows of pens, and this was divided by a strong rope passed down the centre. Thus two passages were formed, one for downward, the other for upward progress. By this arrangement, although there were crowds of spectators, there was ample room; even the most distinguished pens might, with a little patience, be comfortably viewed. The square tower at the extremity formed an admirable place for Rabbits and Pigeons. The large doors were open on either side, affording a constant current of air, and admitting to the square elevated terraces, with extensive views, and redolent of the perfume that arose from the gardens beneath. While speaking of Rabbits and Pigeons, we cannot avoid noticing the pleasure this part of the Exhibition affords to two classes,—those who are prevented by circumstances from keeping poultry, and to children. Numbers who cannot, by any means in their power, keep fowls with any hope of success, whose only outlet is a very small back-yard, and others who have not even that, but an untenanted washhouse, can keep their Rabbits; and the Pigeons dwell in that part of the house which for many years has been allotted to a large section of poets and *literati*, who strive vainly to reach the upper rounds of the ladder of fame. We spent no part of our time more pleasantly than that we passed watching the children among these two classes. Theirs was pure delight, unchequered by disappointment; and, while with them we forgot for a time two scores of the years that have passed over our heads, nothing gave us more pleasure than to mark the delight of the children of some schools that were there on this occasion. We have noticed the same thing at Birmingham, on the last morning, when all the charity and other schools are admitted.

We must, however, proceed to the mere matter of fact duties of our report, and will begin by recording our astonishment that so many good pens of chickens could be sent, after a season of universal failure in hatching, like that of 1858. We have it on the best authority, that Mr. Houghton received numerous letters from old and large exhibitors, expressing their regret they were unable to send, owing to the failure of all their early hatches, and promising great things for the

Winter Show. We will now take the classes as they occur, pointing out anything that calls for especial remark, and referring for other information to the prize list we published last week.

The Judges declared the *Spanish* a very good class, and we doubt whether so many good chickens were ever before seen in the month of August, and here we may note a remarkable progress. A few years since, the early birds of this breed, if they possessed white faces, seemed to owe them to precocity, rather than purity; and the chickens were little, round, squat, hen-like figures, as unlike ordinary Spanish as they could well be; but here, they were not only white-faced, but long-legged, growing chickens. Either of the successful may fairly look forward to a continued career. Mr. Fowler's were especially good: the same may be said of the cock in Mr. J. C. Hall's pen. All the prize birds in these two classes may be highly thought of by their owners. They were far above the average.

There was a long class of excellent *Dorking* chickens, and the Hon. W. Vernon maintained the position he has before occupied at this Show,—he was first. Thirteen pens were deemed worthy of different degrees of commendation, and nearly all were meritorious. In some pens there were chickens with deformed and swollen toes: this should be carefully avoided, as it renders success impossible. All that we said of the *Spanish*, may be repeated for the *White Dorkings*. Their increase in size, their symmetry, and the pains which are evidently bestowed on their breeding, have worked a complete revolution. The Judges appended a note here, "that no class shows greater improvement than this." It was difficult to decide between Mr. Robinson and Captain Beardmore.

The next class that calls for especial notice is that for *Buff Cochins*. It was truly a beautiful class. It was worthy of the best days of *Cochins*,—colour, size, shape, all were represented. Barring accidents, Messrs. Stretch, Johnson, and Fowler may expect to be talked of in this class; for we have never seen birds of greater promise. We willingly endorse the opinions of the Judges, that the *Grouse Cochins* formed "one of the best classes ever seen." If we were asked to name the best *Cochin* cock chicken we had ever seen, we would select the cock in Mr. Fowler's pen. He is a remarkable bird. All the prize-takers in this class were beautiful. The Whites were feebly represented, and by no means equal to their coloured brethren. Mr. Chase's was, however, an average pen.

The *Brahmas* were all that could be desired. Mr. Botham, as usual, was first, followed closely by Mr. Fowler. Mr. Botham's birds were remarkable.

The constantly rising *Game* classes came next in order. The Hon. W. Vernon took first and second for White and Piles, followed by Mr. Matthew. All these birds were perfect. Then a hard contest for the honours in Black-breasted,—Mr. G. Moss first and second, Mr. Bentley third. These were not mean exploits. The Blacks and Brassy-wings were not as well represented. Mr. Bullock showed a good pen; but no other was deemed worthy of a second, although a third prize was awarded to Mr. Bullard. Mr. Marryatt took first, and Mr. Bentley second and third for Duckwings.

Then came a class which has of late excited unusual interest, that for single *Game* cocks. It was well contested, and the names of the successful will speak for the quality of the birds:—First, Mr. Matthew; second, Mr. W. Cox; third, Mr. G. Moss.

The Golden-pencilled *Hamburghs* were very good. All the prizes went to new names—Messrs. Carter, Dyson, and Coates. The Silver-pencilled were pronounced "meritorious." Mr. Areher, of course, took first and second; and an exhibitor almost as well known, the Rev. F. B. Pryor, was third. Both these classes deserved honourable mention. We cannot say as much for the Golden-spangled. The first prize was withheld. The Silvers were good. Messrs. Deighton, Robinson, and Beardmore were prize-takers, and the class was praised.

The *Poland* classes were all poor. We know the difficulty of rearing early and good chickens in these classes; but it has been necessary for some time to remind exhibitors, that, unless the entries increase in number, the prizes must be diminished in value. The only average class is that for Silvers. Messrs. Adkins, Dixon, and P. Jones, who took their prizes as placed, sent good birds. In every other class prizes were reluctantly withheld.

The *Malays* were a capital class.

Mr. Coles and the Hon. Miss Dillon took well-merited prizes in the Various class, with *Andalusians* and *Silky Fowls*.

Mr. H. D. Bayly showed an excellent pen of Gold-laced *Bantams*: Mr. Spary was second. The latter gentleman earned a second prize with a middling pen of Silvers. There were some very good White *Bantams*, and excellent Black. The latter were declared a really good class. The Game *Bantams* were, as usual, excellent.

If our memory does not deceive us, the prizes for White *Geese* went to the same competitors as last year. Mr. Manfield's first-prize pen weighed $39\frac{3}{4}$ lbs.; Mr. William's, second, 35 lbs. The Grey were more numerous—Mrs. Seamons, first, $40\frac{1}{4}$ lbs.; Mr. Rigby, second, $35\frac{3}{4}$ lbs. It was a good class.

The Aylesbury *Ducks* were perfect—Mrs. Seamons, first, $20\frac{1}{4}$ lbs.; Mr. Weston, second, $18\frac{1}{4}$ lbs. The Rouens were a good class, and Mr. Fowler's star paled before Mr. Keable, who beat him. No birds have improved more than the Buenos Ayrean Ducks, and we think the time has arrived when they may ask a class for themselves. It was thanks to them, that the class for any other variety of Ducks was pronounced an "unusually good one." Mr. Churchill was first, the Hon. Miss Dillon second. Five other pens were distinguished by the Judges.

Turkeys afforded an easy victory to Mr. Brand.

We are glad to say, that everything connected with the Show was well managed. Indeed, Mr. Houghton's ability in this department is so well known, that it is almost superfluous to mention it. Those, however, who have to do with him, owe him a public acknowledgement of his zeal and urbanity.

EARLY CHICKENS.

It is pretty generally admitted, that the beginning of this present season was most unfavourable to the production of early chickens; that the eggs incubated were more than commonly unfertile; and that, even when chickens were produced, disease and consumption destroyed the larger proportion. So general, indeed, were these complaints amongst most of our exhibitors, that the supposition has been that the severities of the spring, and that alone, produced these series of mishaps. To an extent, perchance, this may be correct; but, no doubt, a far more cogent reason may be adduced by attributing it to the want of vigorous constitution in the parent fowls, than to an inopportune season alone. It is a failing of the present day to quite overtax the energies of *fancy* poultry by over-exhibition. In not a few cases that could be referred to, pens of poultry have actually journeyed directly from Exhibition to Exhibition for weeks together, and that without the relief a single hour's run would afford them. Thus the birds, so singularly maltreated, have not only been deprived of animal health and vigour, but afterwards complained of as "never breeding," and likewise "losing" their position in the Show-room. This result is the *only* one that can ensue under such hardships; for it should be always remembered, that travelling to and fro invariably racks poultry to a greater degree than the confinement during competition.

A circumstance connected with the poultry-yard of one of our principal exhibitors will prove how necessary occasional relief is to prize poultry, of whatever variety. The gentleman alluded to had a cock and two hens, excellent specimens, but continually competing for public rewards. He said, "they never bred, nor did he believe they ever would,—their sole utility was for a Show-pen." The birds, barring a constant appearance of lassitude, looked well; they ate heartily; the cock crowed as loudly as ever; was attentive to his hens; yet not one chicken could their owner ever procure. In this dilemma, and fearing they might get beat, he wisely determined to rest them a little. They were turned out some four or five months ago. The two hens took to the hedgerows around a plantation, laid astray, and at this hour nineteen as healthy, promising chickens as could be desired form the two different broods,—one to either parent. It is a singular fact, that "stolen nests," as they are commonly called, very rarely contain a single addled egg; and it is right to mention, that in the cases just referred to not one nesting-place could ever be found, though sedulously looked for; the other hen had evi-

dently produced her eleven chicks from the like number of eggs. Surely nothing could more distinctly prove to every owner the imperative need of a temporary relief from excitement, if they hope for success among their poultry. Yet how frequently is it withheld until a quite undermined constitution admits not of remedy, and losses are incurred that not only tell heavily against the profitable returns, but trios of excellent fowls are rendered comparatively useless from the positive loss of one or other of them.

That poultry labouring under this misfortune of close confinement should recover much more slowly, after the hardships of winter, than their fellows at liberty, few will dispute; and, consequently, from such parents *early* chickens are unattainable; though not unfrequently, about midsummer, chickens are procurable enough and to spare, but when quite too late for the amateur's intended purposes. Hence it is we so frequently hear the loud complaint of the vexation and "trouble of late chickens," combined with the expressed determination "never" to fall into the same error again. Yet, to many parties, each consecutive year only reproduces the annoyance, which as certainly might be avoided, were the stock-birds more naturally treated, and the progeny as certainly invigorated, not only by early "looking out for themselves," but by having all the fine weather before them. Let, then, those parties, desirous of early, strong chickens, be careful how they treat their birds during midwinter.—FAIRPLAY.

FUTURE POULTRY SHOWS.

ON looking over some of the back numbers of THE COTTAGE GARDENER, and on coming to those for May, June, and July, 1857, and on looking down the list of Shows then to come off, I find a long list of them; some of them were to, and did take place during the months of June, July, August, September, and others later. Amongst them, I may mention, Gloucester, Dorchester, Leamington, &c. How is it, I want to know, there are so few in the list this year? Is it possible that the Shows are gone to the ground, or have not the days yet been fixed for holding them? If the latter, no doubt we shall see them in the list of Shows to come again; but if the former, I trust the respective Committees have not given up their Shows without first making sure that they have some sufficient reason for doing so; and, if their reason was because it did not pay, let them well look into the matter and see that the fault does not lie at their own door, which is not at all impossible, in more ways than one. Let them see that they did not give *too high* prizes, and were, consequently, obliged to charge such high rates of entry that many exhibitors, who have not yet got to that pitch at which they can look down upon success as next to a certainty, did not choose to pay them, with the chance of getting nothing. Whereas, if the prizes had been rather more moderate, and the entrance fee 5s. instead of 10s., they would gladly have supported them, by entering two or three pens. Now, other Shows may be able to attribute their failure to another, although a somewhat similar cause. They may, for instance, make it a rule, that all persons exhibiting must be members, and pay a subscription of 10s., or perhaps more, independent of the entrance fee. Now, many will not do this, although, perhaps, the entrance fee may be rather the less for it. This plan would, of course, be an advantage to a person who exhibits largely; but to the humble exhibitor who wishes to enter one or two pens, it is, of course, a great disadvantage; and the consequence is, he keeps his birds at home, his money in his pocket, and the Show goes minus his support. But to come to the point, the success of all Poultry Shows, as well as other Societies, depends entirely upon the support they get; and, therefore, Committees and Secretaries should make such arrangements as are likely to meet with the approbation of poultry breeders, and offer such prizes as will enable them safely to charge moderate rates of entry, and thus secure a fair number of them. As to the amount of the prizes, they could not do better than follow the example of the Crystal Palace Show Committee, and give three prizes in some of the principal classes,—say, first, £3; second, £2; third, £1; or even, first, £2; second, £1 10s.; third, £1; and charge 5s. entry, which no one could have the least cause to complain of, and they could make sure of being well supported. As has been often proved, Shows, where such prizes

as the above are offered, and this rate of entry charged, in variably pay better than those were such high prizes are given, and they are obliged to charge such high rates of entry. In fact, I am afraid the Secretary of one of the *high-prize Shows*, last year, had striking proof that they did *not pay*. I am pleased to see the Worcester Committee have lowered their prizes, and their entrance fee. There is not the least doubt, in my mind, but that they will have a much better Show than they did last year; as, no doubt, many will send who did not do so before. At any rate, I can promise them one who will not mind paying 5s. or 6s., but will not pay 10s. entry at any Show, let the prizes be what they may.—ONE WHO TAKES AN INTEREST IN POULTRY SHOWS.

NATIVE PLACE OF THE FRIZZLED FOWL.

NEAR Massangano I observed what seemed to be an effort of nature to furnish a variety of domestic fowls, more capable than the common kind of bearing the heat of the sun. This was a hen and chickens, with all their feathers curled upwards; thus giving shade to the body without increasing the heat. They are here named "kisafu" by the native population, who pay a high price for them when they wish to offer them as a sacrifice, and by the Portuguese they are termed "arripiada," or shivering. There seems to be a tendency in nature to afford varieties adapted to the convenience of man. A kind of very short-legged fowl among the Boers was obtained, in consequence of observing that such were more easily caught for transportation, in their frequent removals in search of pasture. A similar instance of securing a variety, occurred with the short-limbed sheep in America.—(*Dr. Livingstone's Missionary Travels.*)

NEWMILLER-DAM POULTRY SHOW.

(From a Correspondent.)

THE sixth annual Exhibition of the above flourishing Society took place on Tuesday, the 3rd inst., in a field kindly lent for the occasion, by Sir L. M. S. Pilkington, Bart., when a large display of fowls were exhibited.

The entries included the names of many of the principal breeders in the country. The Gold and Silver-spangled *Hamburgs* were very superior. The *Cochin-China* pens were also very good. A pen of *Chickens*, the property of Mr. Pickard, which gained the first prize, were much admired for the beauty of their form and plumage. The *Dorkings* and *Spanish* were fine birds. The *Geese* and *Turkeys* were not so good as we have seen. The pen of young *Ducks* shown by D. B. Kendall, Esq., M.D., was very superior. Mr. John Crosland, jun., exhibited a splendid pen of *Black Hamburgs*; in fact, all his birds were a credit to our Exhibition. There was a good show of *Bantams*. These pens of little beauties were surrounded by a crowd of spectators during the day, and, amid the bonnets, hoops, and crinoline of the fair gazers, it was, indeed, difficult even to obtain a glimpse of these valuable birds, of which no less than fourteen pens were exhibited.

After a short address by Mr. W. Barratt, three hearty cheers (at the suggestion of the Rev. W. H. Teale) were given for Sir L. M. S. Pilkington, Bart., for his kindness in allowing the Exhibition to be held in one of his fields.

Towards six o'clock the company began to disperse, and the proceedings of the day, which had been conducted throughout with the greatest harmony, and which reflected considerable credit upon the managing Committee, was brought to a close.

The following is a list of the prizes awarded to the successful exhibitors:—

HAMBURGHIS (Golden-spangled).—First, S. Pickard. Second, J. Crosland, jun. *Chickens*.—First, J. Crosland, jun. Second, J. Oxley.

HAMBURGHIS (Silver-spangled).—First, J. Crosland, jun. Second, Sir L. M. S. Pilkington, Bart. *Chickens*.—First, J. Crosland, jun. Second, Sir L. M. S. Pilkington, Bart.

DORKINGS.—First, Sir L. M. S. Pilkington, Bart. Second, H. Hainsworth. *Chickens*.—First, S. Pickard. Second, H. Hainsworth.

SPANISH.—Prize, J. Wood. (No competition.)

COCHIN-CHINA.—First, S. Pickard. Second, J. Faucett. *Chickens*.—Prize, S. Pickard. (No competition.)

GAME (Any breed not named).—First, J. Crosland, jun. Second, S. Ibotson.

BLACK HAMBURGHIS (Any cross breed).—First, J. Crosland, jun. Second, J. Faucett.

BANTAMS.—First, S. Pickard. Second, J. Crosland, jun. *Chickens*.—First, S. Pickard. Second, J. Crosland, jun.

TURKEYS.—First, J. Faucett. Second, Sir L. M. S. Pilkington, Bart.

GEESE.—First, J. Faucett. Second, J. C. Johnson.

DUCKS.—First, D. B. Kendall, M.D. Second, J. Faucett.

GUINEA FOWLS.—Prize, J. Hirst.

EXTRA PRIZES.

DORKINGS (White).—Prize, J. C. D. Charlesworth, M.P. *Chickens*.—Prize, J. C. D. Charlesworth, M.P.

COCHIN-CHINA.—Prize, J. Warrenner.

SILKEN FOWLS.—First, J. Woodhead. Second, H. Emery.

GAME BANTAMS.—Prize, J. Crosland, jun. *Chickens*.—First, — Branagan. Second, G. Hill.

THE LONDON PIGEON CLUBS.

To our country readers, a short account of the different London clubs and associations devoted to the Pigeon fancy may prove not uninteresting.

The admiration of these beautiful birds will be found to pervade all ranks of society, from the aristocratic gentleman, who measures his income by thousands, to the humble easter-monger, who exists upon a few shillings a week.

The clubs vary no less than the members, some aspiring to the great room at Freemasons Hall, others being satisfied with the accommodation afforded by the humblest beer-shop in Spitalfields.

The *Philoperisteron*. This hard word, fair reader ignorant of Greek, means that the members are *lovers of doves*, but the name is too long for British brevity, so they are generally termed the "Philos," which implies that they are lovers, without indicating the objects, a deficiency that female ingenuity will readily supply. But to return to the *Philoperisteron* Society itself, it may be described as an association of gentlemen, meeting several times during the winter months at the Freemasons Hall, the meetings being so far private that no stranger can gain admission without being personally introduced by a member. In addition to these monthly meetings, there is an annual grand Show in January, invitations to which are liberally distributed, and of which an account always appears in these columns.

The *Philoperisteron* numbers among its members some of the most distinguished naturalists of the present day, and many of the most enthusiastic amateurs. Its annual Show is far superior to any other Pigeon Exhibition whatever, almost every variety being well represented. Amongst the members, Mr. Wicking is unequalled for Owls, Magpies, and Short-faced Almond Baldheads; Messrs. Hayne and Parkinson are not surpassed in Carriers, nor Mr. Butt in Powters; Messrs. Harrison Weir, Maddeford, and Percival have all repeatedly attained the pride of place at the Exhibitions of numerous Societies; Mr. Esquilant is pre-eminent in Almond and other Short-faced Tumblers; Messrs. Lucy and Fossuck indulge in the same fancy; and so on through all the members.

The annual subscription is one guinea, and the entrance fee the same. The rules are very strict, one of their regulations excluding dealers even as visitors. Such being the case, it cannot be a matter of surprise that many of the best members never show their birds at those Exhibitions where dealers are allowed to award prizes to birds which they have but just sold for the purpose of being exhibited.

The *National Columbarian* is another club, recently established on very much the same plan. Its subscription, however, is lower than that of the *Philoperisteron*, being 10s. 6d. annually, and the same for entrance fee; and its meetings, which are held at Anderton's Hotel, Fleet-street, are more frequent. Its list of members includes many of our most energetic amateurs (including several of the *Philos*); and it is to be regarded as a rising Society, its numbers increasing steadily.

Its first Meeting for the Show of young birds took place on Tuesday, the 27th of July, when some very good specimens were shown by Messrs. Esquilant, Southwood, Tegetmeier, Ansted, &c.

The ordinary meetings take place on the fourth Tuesday of the month, from September to February inclusive. Mr. W. W. Towse is the Honorary Secretary.

The City, Columbarian, and other Societies, will form the subject of a second notice.—W. B. TEGETMEIER.

TUMBLER PIGEONS.

I AM glad to find, from Mr. B. P. Brent's reply to my queries on "Tumbler Pigeons," that he does not condemn my fancy in keeping them on account of their tumbling propensity. At present, being myself rather a bird of passage, I have only a few picked up here and there,—blacks, browns, and whites: the black and dark blue ones appear to me the best. I have one now, a blue cock: I frequently see him, after returning from flight, and when within eighteen inches or a couple of feet from the place he intends pitching on, perform a complete somersault. And this does not prevent his dropping on the place he first chose. I have a black hen, his mate, who, through an accident some time back, lost her tail, and it was most amusing to watch her tumbling in the air, sometimes as many as three somersaults, one after the other. I have also a pair of brown ones, which never tumble; but one of their progeny, almost a white bird, has turned out a capital tumbler, and is the only one of their stock I have saved to breed from. Of course, I can but agree with Mr. Brent, as regards their plumage and shape when kept for Exhibition birds; but as such I should never keep Tumblers,—rather Fantails, Powters, Jacobins, &c.

It was said that Runts were coming out very strong at Sydenham: will your correspondent kindly tell us whether they are considered as delicate for cooking purposes as smaller sorts? For my part, they remind me of Cochins among the poultry.

It is curious to observe what effect a coming change of weather has on Pigeons and other poultry. I have a brood of young Game fowl, about three months old, the cockerels predominating: so sure as we are going to have rain, are these young rascals seen exhibiting their inherent pugilistic inclinations, so much so that a month ago I had two having each an eye bunged up. The Pigeons also seem to me to take longer flights before rain, and tumble oftener. I have several times taken the black Tumbler, before mentioned, about a mile and a half from home, and then let her fly; and, if my servant's word can be relied on, she has reached home in less than five minutes. Now, whilst breeding, I fear disturbing them.

Will your correspondent inform me whether the cock Pigeon ever feeds his hen? I think I saw an instance of it yesterday, between two white Fantails.

Some time ago I hatched a Wood Pigeon's egg, under some common Pigeons; but they would not feed it. Has this been ever tried? and would it be possible by such means to domesticate the wild Pigeon?—A. WELSHMAN.

LIME-WASHING.—This should be done over the interior of the poultry-house once a-year, at the least. For the following directions we are indebted to Mr. Tegetmeier's excellent "Manual of Domestic Economy," the fourth edition of which has just appeared:—"Lime-washing is, from the cleansing action of the quick-lime, a much more effectual mode of purification, but is less frequently had recourse to, from the general ignorance respecting the proper mode of preparing the lime-wash. If glue is employed, it is destroyed by the corrosive action of the lime, and the white rubs off the walls. Lime-wash is prepared by placing some freshly-burned quick-lime in a pail, and pouring on sufficient water to cover it; if the lime is fresh, great heat is given out, and the liquid boils; boiled oil (a preparation of linseed oil, sold by all oilmen) should be immediately added, in the proportion of a pint to a gallon of wash. For coarser work, any common refuse fat may be used instead of the boiled oil. The whole should then be thinned with water to the required consistence, and applied with a brush. Care should be taken not to leave the brush in the lime-wash for any length of time, as it destroys the bristles. Should coloured wash be required, the addition of one pound of green vitriol (sulphate of iron) to every two gallons of wash gives a very

pleasing drab; and for outside work, a cheaper colour may be obtained by adding a shovel of fresh cowdung to a pailful of wash. Lime-washing cannot be too strongly recommended as a means of purification, especially in seasons when any infectious disorders are prevalent."

PIGEONS.

THE AUSTRALIAN BRONZE-WINGED PIGEON (*Columba chalcoptera*).

As this species of Pigeon has frequently appeared of late at our Poultry Exhibitions, I copy the following description from the "Naturalist's Library," of 1835:—"The Bronze-winged Dove is a native of Australia, and many of the Islands of the Pacific. It affects sandy and arid situations, and is usually seen upon the ground, or sometimes perched upon the low branches of the shrubs that grow in such situations. It breeds in the holes, or decayed stumps of trees, near the ground, and not unfrequently upon the surface of the earth itself, making a very inartificial nest, and laying two white eggs. It is usually seen in pairs, and the place of its retreat is readily discovered by its loud and sonorous cooings, which, at a distance, are said to resemble the lowing of a cow. Its chief food consists of a berry resembling a cherry, the stones of which are generally found in its stomach, during its abode around Sydney, which appears to be there restricted to the breeding season, as it is only met with in that district from the month of September till February.

"In size, it equals our Wood Pigeon, measuring about fifteen inches in extreme length. The bill, from the corners of the mouth, is nearly one inch, of a black colour, reddish towards the base. The forehead, the streak between the eyes, and the throat, are white. The crown, hair-brown, with a reddish tinge, surrounded with a broad fillet of dusky cochineal red. Cheeks and sides of neck, bluish-grey. Lower part of fore-neck and breast, purplish grey. Abdomen and vent, grey, slightly tinged with pale lavender-purple. Back, scapulars, rump, and upper tail coverts, hair-brown, with a greenish tint in some lights, each feather margined paler. Lesser and greater wing-coverts, bluish-grey; the exterior webs each with a large ovate metallic spot, exhibiting various tints, according to the light in which it is viewed. Quills, hair-brown on the upper surface; the inner surface of the inner webs deeply margined with pale reddish-orange, which is also the colour of the axillary feathers and under-wing coverts. Tail, bluish-grey, with a broad black fascia, about an inch from the top, slightly rounded. Legs, red, with two rows of scales in front; the sides reticulated."

I have been informed by a gentleman, a collector of specimens of natural history, that he met with a settler in Australia who had domesticated this species, and kept them tame.—B. P. BRENT.

OUR LETTER BOX.

THE HOUSE TUMBLER PIGEON.—I have to thank Mr. James Paton for his information respecting this very curious variety of Tumbler Pigeon. His description has greatly interested me. My remark that, those that tumbled off the hand, and could not rise on that account, perhaps had a broken wing, was the only probable conclusion I could come to in the matter; as I am totally unacquainted with the novel variety alluded to by Mr. Paton. I should beg him to give us some more minute account of this peculiar variety,—such as any facts relative to their origin or derivation, their colour and marking, their size, shape of head, length of beak, colour of the eye, if feather-footed, their breeding capabilities, &c., and he will greatly oblige.—B. P. BRENT.

LONDON MARKETS.—AUGUST 16TH.

POULTRY.

There is very little trade, and, as usual, prices are gradually falling. There is not, however, such a glut as we have sometimes seen; the continued scarcity for many months has kept the stock low. This week has begun the Grouse season. We make no quotation, because the prices realised for choice birds during the first two days would appear ridiculous.

	Each.		Each.
Large Fowls ...	4s. 6d. to 5s. 0d.	Leverets.....	3s. 0d. to 3s. 6d.
Small ditto.....	3 0 " 3 6	Pigeons	0 7 " 0 8
Chickens.....	2 0 " 2 6	Guinea Fowls.	0 0 " 0 0
Geese	6 6 " 7 0	Rabbits	1 3 " 1 4
Ducks	3 0 " 3 6	Wild ditto.....	0 8 " 0 9

WEEKLY CALENDAR.

Day of Mth	Day of Week	AUGUST 24—30, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
24	TU	ST. BARTHOLOMEW.	30.180—29.760	85—54	E.	—	1 af 5	4 af 7	rises.	☺	2 13	236
25	W	Bœckia tenuifolia.	30.278—29.932	82—46	S.W.	—	3 5	1 7	20 7	16	1 57	237
26	TH	PRINCE ALBERT BORN, 1819.	30.300—30.270	83—46	W.	—	4 5	VI.	30 7	17	1 40	238
27	F	Beatonia atrata.	30.298—30.246	81—44	S.W.	—	6 5	57 6	43 7	18	1 23	239
28	S	Billardiera mutabilis.	30.261—30.202	77—52	N.E.	—	7 5	55 6	56 7	19	1 6	240
29	SUN	13 SUNDAY AFTER TRINITY.	30.161—30.045	70—50	N.E.	—	9 5	53 6	13 8	20	0 48	241
30	M	Billardiera scandens.	30.014—29.955	82—45	E.	—	11 5	51 6	36 8	21	0 30	242

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 72.0° and 49.5°, respectively. The greatest heat, 85°, occurred on the 29th, in 1842; and the lowest cold, 32°, on the 29th, in 1850. During the period 139 days were fine, and on 78 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ARTICHOKES.—When all the heads are gathered, cut off the stems close to the ground, and remove the dead leaves.

CABBAGE.—Continue to plant out for *Coleworts*, and prick out the seedling plants, intended for the main spring crop.

FRENCH BEANS (DWARF).—Give them an abundant supply of water in dry weather, to prolong their productiveness.

LEEKs.—Plant out the thinnings from the seed-bed in favourable weather.

ONIONS.—Sow immediately, if not done, as advised last week.

POT-HERBS.—Plant, when the weather is showery, *Sage*, *Thyme*, *Mint*, *Balm*, *Winter Savory*, &c., to be well established in the ground, the better to resist the severity of the winter.

TURNIPS.—Sow the last crop for this season, and thin the former sowings.

VEGETABLE MARROW.—Supply the plants with an abundance of water in dry weather, and cover the ground between the runners with short grass, to prevent evaporation.

FRUIT GARDEN.

PEACHES and NECTARINES.—As they now begin to ripen, it will be necessary to fix nets, hitched up in several places, so as to form open bags, to catch the falling fruit; for although fruit may be daily examined and gathered by hand, which is the best method, nevertheless it will sometimes fall, and, if means are not used to catch it, will be bruised and spoiled.

STRAWBERRIES.—Proceed with despatch in making fresh plantations, as the produce next season will depend in a great measure upon early planting at this season. Whether they will bear well next year, or whether they will not arrive at their bearing state until the year after, will also depend upon two or three weeks planting before or after the end of this month. Runners of the early planting will have favourable time to establish themselves, and to mature their buds; which will but rarely, or under some very favourable combination of circumstances, happen to the latter.

FLOWER GARDEN.

AURICULAS.—Prick out seedlings into store pots or pans. Stir the surface of the soil around the old plants.

BEDDING-OUT STOCK.—Pot off rooted cuttings into small pots, to be placed in a pit, or frame, to be kept close and shaded until they make fresh roots, when they should be placed in an open airy situation, on coal-ashes, to prevent the ingress of worms, and to harden them before they are housed for the winter. Continue to put in cuttings.

BIENNIALS and PERENNIALS.—Plant,—at the earliest

opportunity, in showery weather; or, if dry weather sets in, let them be watered for a few days after planting,—*Canterbury Bells*, *Sweet Williams*, *Fox-gloves*, *Antirrhinums*, *Wallflowers*, *Pinks*, *Carnations*, seedling *Hollyhocks*, and all such things, that they may be well established in the ground before winter.

CARNATIONS and PICOTEES.—Plant out the layers as soon as rooted; if potted, they delight in three-fourths sandy loam and one-fourth leaf mould, with a slight sprinkling of road sand.

DAHLIAS.—Remove all damaged and imperfect flowers. Constant attention to be given to staking and tying, to save them from the destructive effects of boisterous winds. Young shoots of any choice sorts will strike root freely in a brisk bottom heat.

INTERMEDIATE STOCKS.—Pot them as soon as they are fit to handle,—one in a small-sized pot, in turfy loam. To be watered and occasionally sprinkled over head, and shaded for a few days, until they take fresh roothold, when they may be treated as hardy plants, and will require but slight protection in the most severe portion of the winter.

PANSIES.—Cuttings strike freely now. Plant out seedlings into beds of rich compost.

PINKS.—Stir the surface of the soil,—which sometimes becomes hardened by heat at this season, after a heavy thunder-shower,—amongst the pipings that have been planted out in beds. The operation, if time would permit, would be also of service to all young plants that have been planted out during the summer.

RANUNCULUS ROOTS.—To be looked over, as the least damp will produce mouldiness.

WILLIAM KEANE.

CRYSTAL PALACE GARDENS.

(Continued from page 308.)

THE design of the arched and trellis work, for climbers, on the top of the Rose mount, at the Crystal Palace, has puzzled many of our English landscape gardeners. Neither Loudon, Repton, Brown, Price, nor any other of our great celebrities, hinted at such a way of exhibiting climbers. The Italian terrace is a common feature in our garden landscape; but the Italian manner of training the Vine on open trellis-work, over-head, is new to most English gardens: the plan is only to be seen in a few of our best gardens, and, where it is, the cottage system of Italy is adopted, as far as I have seen or heard of. At the Crystal Palace, however, they have carried the idea as far as it is practicable, and puzzled the natives; but, now that the thing is beginning to tell its own tale, we can very well understand how it will look when it is completely finished, two or three years hence.

When the thing is complete, those twelve grey, sheet-iron arches, which few of us approve of as seen either in the distance or in the sky-line, will be entirely and for ever hidden from our view; they will be clothed with

the softest and most pleasing green, both in summer and winter, and the open trellis-work between the arches will be covered with Roses and other deciduous climbers. The clothing of the arches will be of Irish Ivy complete, and being trained, as they well know how best to train at the Crystal Palace, nothing of the kind can look more rich, nor be better furnished. Perhaps they will run a fringe of Roses along each side of every arch, perhaps not; but the foundation is laid for using the Virginian Creeper among the Ivy in a manner that is not adopted anywhere else, except at the Experimental Garden, and at the vicarage of St. Mark's, Surbiton; at least, as far as I know of. This way is, not to allow the Ivy and the Creeper to fight one another, and hurt both in the struggle; but to make the Ivy the master or mistress, and the Virginian the servant. The use and intention of the Creeper is the glow of deep rich purple which the leaves give in the autumn; and the larger and more healthy they are, the richer will be the contrast between the Ivy and themselves. To make a servant of the Creeper, it is cut back to one or two eyes every winter, and a space of from ten to fifteen feet in height is left free all the winter, to be clothed with the "long-rod system," the summer growth of the Creeper; every inch of this ten or fifteen feet to be cut back to the bottom eye at every pruning. But the thing is more easy to do than to describe, and we must just give an idea of it.

Suppose the wall of a house two stories high, or twenty feet high, more or less, to be covered with Ivy and the Virginian Creeper which is always a great ornament to the Ivy; the Creeper is in the manner of an old Vine, and much like one, covering the space as much as the Ivy itself; both are struggling for room and mastery, and every young shoot of the Creeper is obliged to be pruned in to the surface of the Ivy as fast as it grows out and hangs over the Ivy, or like the spurring system on an old Vine against a house. On that system, the leaves of the Creeper are not more than half the size they would grow to, if the Creeper was treated like a Vine on the long-rod system, and, of course, not more than half so handsome in the autumn. The summer spurring gives four times more trouble to keep right than the latter system; for the long-rod system requires no cutting, nor tying, nor any sort of attention the whole summer. As fast as it grows the clasping tendrils take hold of the Ivy, and the large succulent leaves shade the Ivy to its advantage. By the time the top of the long rods of the Creepers reach up to the proper height, the leaves lower down are beginning to change, and the whole soon becomes of the richest purple hue; after that, frost-fall and freedom to the Ivy till next June, July, and August, according to its height above the close pruning of the Creeper, which pruning is done as soon as the leaves are down.

Let us next suppose a strong plant of the Virginian Creeper to reach the bottom of one of the arches of the Crystal Palace; it is cut just at the springing of the arch,—say two to each arch all round. At the next growth, the strongest shoot, or eye, only, is allowed to grow farther that way, and when that shoot reaches the crown of the arch it is brought down, and trained quite horizontal to the opposite bottom corner of the arch, and is fastened there, and stopped. These horizontal shoots remain there as long as the plant lives; the side-shoots from them will be annually trained over the Ivy, and cut back to the horizontal every winter. But this is all supposition, as I have not the pleasure of knowing Mr. Milner, who directs the out-door works, nor any of his foremen. I never yet had the smallest hint, nor anything pointed out to me, out of the Palace itself. But that is the

best way by many degrees of treating Ivy and Virginian Creepers together; and, as they do most things in the best way there, I conclude this training will not be an exception. The pillars next the arches, and from which they are supported, are now clothed with luxuriant Ivy up to, or near, the springing of the arches; and there are several Virginian Creepers about, which make my story self-evident.

There are also Roses, mostly of the Ayrshire breed, Hop plants, Glycine, Honeysuckles, Sweet Clematis, or *Clematis flammula*, and three or four other Clematis, —as *Viticella*, *Hendersonii*, and the like. All these are to run up to cover the sides and the roof between the arches; and there is another set of dwarf trainers to cover the low trellis-work next to the walk, which trellis is not much over four feet in height. Over this trellis, we have views of all parts of the garden from round the top of the mount; also of the inner part of the top itself. A most beautiful arrangement, when it is all complete by the growth of the covering.

This low trellis is in three divisions to each opening, on the outer side of the walk, and each division is nine or ten feet wide, and planted with one kind of plant. The inner side is in large divisions of eighteen or twenty feet each, and each of these is also planted with one kind of plant,—a good school to learn the best plants to train in very exposed situations, besides seeing the Italian style of training. Therefore, it is well worth while to name the plants. The inner side of the walk first, in which are twelve openings, to correspond with the twelve arches above. No. 1, is covered with *variegated Ivy*; 2, *Roses*, hybrid *Chinas* probably; 3, *Cotoneaster microphylla*, which no cold will impair; 4, *Berberis*; 5, *Roses*; 6, *Clematis Sieboldii*; 7, *Honeysuckle*, and old *China Rose*; 8, *green Ivy*; 9, common *China Rose*; 10, *Honeysuckle*; 11, *Roses*; and 12, *Forsythia viridissima*. The twelve outer divisions are each in three parts, of about nine or ten feet each, and are thus planted. No. 1, *Pyrus Japonica*, first division; *Roses*, middle division; and *Pyrus Japonica*, the last division; 2, same way, with *Andromeda axillaris*, or one like it, *Roses* and *Andromeda* repeated; 3, the two ends with *Lecasteria formosa*, and *Roses* between; 4, the ends with *yellow Yew*, and *Roses* in the middle; *Weigela rosea*, *Roses*, and *Weigela*; 6, *Cotoneaster microphylla*, *Roses*, and third division repeated *Cotoneaster*; 7, first and last division, *Pyrus Japonica*, or *Cydonia Japonica*, with *Roses* in the centre division; 8, *Magnolia conspicua*, or one very like first and last divisions, and *Roses* between; 9, *Deutzia corymbosa*, twice, and *Roses* between; 10, the Yew-like plant called *Taxus adpressa*, twice, and *Roses* between,—very good; 11, *Spiraea ariafolia* two end divisions, and *Roses* in the middle division; and 12, *Weigela* repeated, and *Roses* between. Now, all these climbers and trainers are planted very systematically, with a view to their effect and uses, when they are full grown; and it required a long head to make the arrangement as it is. Yet I have met on the spot with excellent men, and good gardeners too, who could not see, nor allow, that there was any design at all in the whole thing, that there was no meaning in it, and that the whole mount was a "jumble."

Now, I may not have hit on the *exact* way it is intended to finish all the training, when the whole is covered by the climbers; but, if there is a "sermon in trees," I am sure I am not far from the text.

The fronts of the shrubberies, woods, and wilderness, are four, if not six times, better planted this year than they were last season, because there are four or six times less of scarlet used in the said planting, and because other tints of scarlet than that of *Tom Thumb* is used,—*Nosegay* Geraniums also. If one-fourth of

their Geraniums were *Nosegays*, it would be a great improvement to the garden; but, having only one kind of *Nosegay*, they cannot yet break the sameness of their beds with it.

The Dahlia ground consists of ten large circular beds, of from twenty to twenty-five feet in diameter, with a large mass of fine Hollyhocks in the centre of each; then the Dahlias in circles; and outside, a row of variegated Geraniums, and Geraniums not variegated, in alternate beds all round. The kinds are—*Flower of the Day*, *Cottage Maid*, and *Nosegay*, all beautifully kept, but the Dahlias not trained, which is the best way, except for the very dwarf kinds. The Crystal Palace Dahlia was only coming into flower-bud, and the old purple *Zelinda* just coming into bloom.

In the transition ground, where the strictly geometric style begins to give way to the more natural system,—as you recede from the walks,—there are some new improvements introduced for the first time, the most marked of which is on both sides of the main centre walk, between the grand terrace and the great basin, above the water temples, where we have to look down from the parapet on the line of beds. In each of the straight lines there are seven circular beds, and seven oblong beds, eight or nine feet wide, the oblongs about twenty-five feet in length. All the circles have a nice *Humea* in the centre, as we began at the Experimental garden last year; and, from the centre bed in the line, the plantings, at least the colours, are duplicate, the top half, having the same colours as the bottom half, which is a very effective way. Round the *Humea*, in all the beds, is a circle of *Fuchsia coralina*, about thirty inches in diameter, to hide the bottom of the *Humea*, which is always more or less bare. But this season our *Humeas*, at the Experimental, branch from the very bottom, though that is unusual.

Now, let us begin at the top of one side and go down to the middle,—what is below the middle is a duplicate of what we shall review above it, and the whole line is a duplicate of the one on the other side: all this, to the very letter, is scientific planting. The top of all is a large *Deodar*, with a large circle of earth, and four rows of *asters* next the walk, to take off the rawness of the bare earth. Skylarks may sing their way up to the limits of their flight, and whistle in their descent against this system till time is no more, but they will not convince me, that this is not the right and proper way to deal with all newly-planted trees of a large size, if they are planted in a garden. Give them as much free, open-worked soil, without grass, as you can well spare, for the first six or ten years; and, if the bare beds come near your flower-beds, and you yourself are fond of flowers, have them edged with flowers by all means. There is no rule of art or science you can violate in so doing, and, as to taste, your own is the best taste for you and yours. But, as without a difference in taste we should never have so many styles of gardening, it is not a sign of good taste to sneer at the tastes of others. Therefore, we shall keep from that, and take the top bed in this row, which is, more or less, twenty-five feet in length, and brimful of the *Cottage Maid* Geranium, with no edging as a change,—a splendid bed. I rose that Geranium in 1842, and in 1844 named it *Shrubland Queen*. The next is a circle of *Flower of the Day*, with a centre piece of *Humea*, which is flanked with *Fuchsia coralina*, or one like it,—a most excellent style. The next an oblong of blue branching *Larkspur*, a failure this hot summer: *formosa*, with a band of *Flower of the Day*, has been a premier bed, in the Experimental, the whole summer. Next, a circle, all of the variegated *Alyssum*, with *Humea* and *Fuchsia*, as before,—a rich gem. Next, an oblong, all of *Cerise*

Unique, which does remarkably well in beds and vases here. The next, a circle of *Mangles' Variegated* Geranium, *Humea*, and *Fuchsia*. Then an oblong, of *Calceolaria amplexicaulis*, trained down. The next circle is of *Cerastium tomentosum*, *Humea*, and *Fuchsia*. And the last bed I shall name is with variegated *Thyme*, and variegated *Alyssum*, *Humea*, and *Fuchsia*,—a new bed. And there is a new style in the circles which come in between the *Rhododendron* beds, at the bottom of each end of the grand terrace itself. The centre is a *Humea*, with a ring of *Canna* round it; then *Flower of the Day*, and an edge of blue *Lobelia*. The *Humea* and *Canna* are repeated in all these circles, and a change in the Geranium and Verbena in each succeeding bed.

The beds round the pedestals, where the *Araucarias* are in the centre of the terrace, are planted with five rows of *Tom Thumb*, the outside edge, next the grass, being *Cerastium tomentosum*, and the inner edgings, next the pedestals, of purple *Petunia*. This is not good, as purple *Petunia* and *Tom Thumb* will never agree close together; but it is well to see such things occasionally, to make sure of the fact.

The *Rhododendrons* and *Heaths* on the rootwork, and, indeed, all over the garden, have done remarkably well this season,—there is not a bad leaf among them; but some of the *Deodars* have suffered from the dry weather, and they alone appear to have been much distressed. The grass is much burnt, but that will do it good instead of harm, if it is not killed in parts. Mr. Lovett, who was gardener at *Shrubland Park* for forty-six years, where the banks and slopes are liable to suffer, in such seasons, declared the grass was always improved after a very hot summer, as it came much finer afterwards. The *Shrubland rose Petunia*, my own favourite seedling, and the large purple one, are, undoubtedly, the two best kinds there. *Marquis de la Fert* is more touchy at *Hampton Court*, and *Countess of Ellesmere* is not nearly so bright as its mother, the *Shrubland rose*, or its brother the *Marquis*. Both Dr. Lindley and myself were, therefore, wrong, when we said the *Marquis* would drive its parent out of the garden. But, if one were to take the pains to cross *Shrubland rose* with the pollen of *Countess of Ellesmere*, surely some one of the seedlings would turn out to be stronger in constitution than the mother, without losing her honest and smiling face. Her weak constitution was the only fault that could ever be brought against her. She is now the oldest of her race in cultivation, except *nyctaginiflora*, which is now scarce, and yet only sixteen years of age this summer. When shall we have a good bedding *Petunia* from the florists, or a bedding plant of any kind, with all the points? When indeed!

But now let us stroll through the Palace, and see the *Victoria regia* (Water Lily) in full bloom: the largest leaf, of seven or more, is just eight feet six inches across. All the water plants do remarkably well in these basins. The *Beaumontia grandiflora* has no signs of flowering: it would be the finest climber there, if it could be made to bloom; but the place is too hot for it. One of the gardeners was trimming it up, and he told me, that "Mr. Beaton used to flower it by having the roots in a stove, and the head brought through to the greenhouse." But, said I, "Do you not think Mr. Beaton is a great talker, and might say what he did not mean?" "Oh! no, no; he is a trump, depend upon it," said he; and so we parted. Several of the *Musas* were in fruit; also, the large branching *Pandanus*, or Screw Pine, which I mentioned last February, as coming into flower then. The fruit of this is of the size, and not unlike, the cone of the stone Pine (*Pinus pinea*), but of a different construction, of course. The Palms, and other plants in

the Avenue of the Sphinxes, were again arranged most artistically for effect. The Alhambra Court was luxury personified; the Camellias and Fuchsias, the Myrtle hedges, the spouting of water, and the cooling touch of the marble floor, were enough to fix all the senses to the place. *Acacia decurrens* was in full bloom and beauty; but, with the exception of the Fuchsias, the water plants, and the furnishing for the marble basins, there were not many kind of plants then in bloom, their blooming season being past.

Indigofera decora, however, was in bloom, every plant of it, standards and all; showing what a valuable conservatory plant it is. Indeed, no good conservatory should be without it, either as a pillar plant, or to be trained like a Peach tree, or like *Plumbago Capensis*. A greenhouse Geranium, very much like *Touchstone* in the bloom, was also a rare example of that race, being at home in-doors at this season of the year.

The border for the climbers in the Colonnade had been reduced to fifteen inches, the rest being bordered over, to make "right of way" to the greatly increasing numbers that visit the Palace this season. *Passion Flowers*, *Fuchsias*, *Scarlet Geraniums*, *Veronicas*, *Solanum Jasminoides*, *Sweet Clematis*, *Heliotropes*, *Lophospermums*, *Maurandias*, *Calempelis*, *Loasa tricolor*, *Clematis Hendersonii*, and *Plumbago Capensis*, were the chief that were in flower; *Acacia grandis* has reached the top, which is twenty feet high, if not more. Altogether, there is a great deal to learn about beds, and different arrangements of flowers, at the Crystal Palace this season, and, if the weather holds up, many of the beds will keep on improving for a long time yet.

D. BEATON.

THE MINIATURE GREENHOUSE.

(List of Plants—continued from page 311.)

MESEMBRYANTHEMUM.—A very hardy tribe of plants, well adapted for the miniature greenhouse, which require to be kept just from frost only, and dry in winter. Many of them flower freely:—

- M. australe* (southern).
- *clavellatum* (small-club-leaved).
- *crassifolium* (thick-leaved).
- *densum* (bearded).
- *floribundum* (bundle-flowered).
- *hirtellum* (small-bristly).
- *reptans* (creeping).
- *acutum* (acute-leaved).
- *albidum* (white-leaved).
- *bellidiflorum* (daisy-flowered).
- *bifidum* (two-cleft).
- *brevicaule* (short-stemmed).
- *caninum* (dog's-tooth).
- *canum* (hoary).
- *crassicaule* (thick-leaved).
- *denticulatum* (tooth-leaved).
- *diminutum* (diminished).
- " *cauliculatum* (small-stemmed).
- *felinum* (cat).
- *fissum* (cleft).
- *grandiflorum* (large-flowered).
- *lucidum* (shining).
- *lupinum* (wolf).
- *magnipunctatum* (large-spotted).
- *moniliforme* (bracelet-shaped).
- *minutum* (minute).
- *nobile* (noble).
- *obconellum* (small-conical).
- *obtusum* (obtuse).
- *octophyllum* (eight-leaved).
- *pisiforme* (pea-shaped).
- *pulchellum* (pretty).

- M. punctatum* (dotted-awl-leaved).
- *pygmaeum* (pigmy).
- *quadrifidum* (four-cleft).
- *rostratum* (beaked).
- *spectabile* (striking).
- *testiculare* (testicular).
- *tigrinum* (tiger).
- *truncatellum* (small-truncated).
- *vulpinum* (fox).

ROCHEA.—A genus allied to *Crassula*.

- R. biconvexa* (doubly-convex).
- *coccinea*. This was formerly *Crassula coccinea*.
- *cymosa* (cymed).
- *jasminea* (jasmine-like).

SEDUM.—All this genus will do well in tiny pots; they will require watering pretty freely when growing, and shading from the summer's sun.

- S. album* (white).
- *Anglicum* (English).
- *Ewersii* (Ewer's).
- *pectinatum* (comb-leaved).
- *Sieboldii* (Siebold's).

SEMPERVIVUM (houseleek).—A good tribe for our purpose:—

- S. arachnoideum* (spider-webbed).
- *globiferum* (globe-bearing).
- *montanum* (mountain).
- *cæspitosum* (tuffy).
- *polyphyllum* (many-leaved).
- *villosum* (shaggy).

STAPELIA.—A large genus of grotesque, free-flowering plants, requiring moderate heat in winter, and scarcely any water. I have selected the following as being most suitable for small pots:—

- S. acuminata* (pointed).
- *cactiformis* (cacti-like).
- *canescens* (hoary).
- S. ciliata* (hair-fringed).
- *gemmiflora* (gem-flowered).
- *hispidula* (rather bristly).
- *mutabilis* (changeable).
- *picta* (painted).
- *vetula* (slate).

T. APPLEBY.

DROUGHT—ITS EFFECTS ON FRUIT TREES.

THE present summer has proved somewhat notorious for heat, and, I may add, for its concomitant, drought, in most quarters, and offers a fair opportunity, amongst gardeners, to compare notes. The most common effects arising from dry summers are as follows:—*Insects*, *fruit casting*, *fungi*, *short growths*, *small fruit*, and *well-ripened wood*.

As to *insects*, the red spider revels in a dry heat, as we all know; and, indeed, many other small enemies succeed similarly. And why? That most of these pests devour the highly elaborated sap, and not the raw material, is certain; and this it is which renders them so pernicious and destructive, for they consume the very material which is already prepared for the purpose of assimilation,—whether as to the fruit of the current season, or the buds, wood, and roots, as to succeeding years. This fact may be observed in many plants, being by no means confined to fruits. Indeed, insects being found principally on the bark of the foliage, where, we are given to understand by the light of science, the real alimentary matter may be found of itself, proves that these worthies perfectly understand their vocation. In fact, all the inferior animals, insects, &c., seem to me to be gifted with very high discriminatory instincts. There are no better judges of what is good, than rats and mice. The blackbird, too, a keen and artful dodger, can readily tell a *Marie Louise* Pear from a *Beurré de Capiaumont*; and also a

Warrington Gooseberry from some of the watery kinds. These things admitted, we have to deal with the question of the consequences of their ravages, which are, indeed, serious considerations, and, did not nature impart a self-restoring power to both animals and vegetables, a great portion of the visible world would have been extinct before now. Of this we have abundant evidence in all parts of the garden. The Roses are spotted with a fungus; the Geranium has its spot, and a queer customer too; a disease, it is said, infests the *Cinérarias*. Potatoes we all know about. The Pear has its blotches; the Peach, its red spider, its green fly, &c.; but could I even think of all the other enemies of the vegetable world, the time would fail me to tell of them,—their name is, indeed, legion. Yet, with all this, I much fear that there may be readers of *THE COTTAGE GARDENER* who still under-rate the ravages of the insect world, or of fungi, and other evils. If so, it is no fault of this work, for it has never ceased to caution those who dabble in gardening from these breakers ahead.

As to *short growths*,—by which I mean under-growth, or the fact of a tree producing too little wood,—those which tend to a perfect ripening of the wood, are a benefit: but there is a medium in such matters. Between grossness and extreme weakness, there are many grades. Fruit trees on shallow and light soils, unless well surface-dressed, suffer exceedingly in such summers as the present; and, in fact, as to making wood, are apt to make small progress. But the ripening thoroughly the wood of gross trees is another affair, and becomes an immense benefit, the latter placing the tree in a position to endure the reverses of succeeding years. And thus it is that nature restores the balance.

Small fruit, and *fruit casting*, are other consequences of such drouthy periods. And how can it be otherwise? As to the first, the system of the tree is short of the manufacturing material, and the gross production, in consequence, is less. And then there is such a thing as fruit cracking, induced by drought.

The circumstance of trees casting their fruit through drought, is well known. Apples and Cherries are the first to declare it; but there are many others which do the same.

All these evils point plainly to the immense benefits derivable from extra labour; for what profit is a half-withered garden? After purchasing proper fruit trees, and carefully training and pruning, as also building expensive walls, is it well to suffer the trees to fall into a ruinous condition for lack of labour?

Summers like this point plainly to the immense importance of surface-dressing; and this annually, or at least biennially. By encouraging a fresh layer of roots upwards, the tree is placed in a position to endure extremes, which are almost ruinous to ill-conditioned trees. The application of liquid manure, too, is most important, especially to those carrying heavy crops. At any rate, liberal waterings are absolutely necessary in dry and hot periods. The benefits derivable from planting in strong, or adhesive loams, too, becomes, in such seasons, obvious to the most casual observer; for light and sandy soils, however well they may contribute to success in moist summers, fall off most seriously during hot and dry ones.

R. ERRINGTON.

THE ONION MAGGOT.

AMONGST the evils to which the various products of the garden are liable, that of the maggot in Onions is far from being the least. Attacking the plant just at a time when its progress ought to be most rapid, the dis-

appointed cultivator sees his crop laid prostrate in a few days, in a manner next to total annihilation; for the insidious pest attacks it from below, and cuts off the communication between the top and the root;—the plant droops to one side, in the fierce midsummer sun; and, though it may not entirely die, only drags out a wretched existence afterwards: a small distorted bulb is the result of those that recover, while a great many perish entirely. Now, to altogether remedy this state of things is, I believe, impossible; but certainly some preventives can be applied which may have considerable effect.

In the first place, we may presume that the Onion, like everything else, thrives better on some soils and situations than on others. Great quantities are grown on the light soils of Bedfordshire and Herts, the sub-soil being a sort of gravel, or, in some instances, chalk; the surface soil on the latter is far from light; but, I believe, it is those mineral substances, which the soil holds in solution, that constitutes its merits for growing particular crops. Certain it is, that Onions grow well in the loamy soils that border London on the north; and, though sometimes maggot may attack them, such attacks are far from serious in the general way. Periods of dry weather are much more to be dreaded, checking the growth and hastening a premature ripening of the bulb. But, as the soil in which the Onion thrives so well is often found in near proximity with the chalk, we may come to the conclusion that that substance is an essential element in its successful culture; and as chalk and lime resemble each other, it becomes the cultivator to apply the one or the other to his Onion beds; though this advice must be received with caution, as it will not always act with advantage on a soil diametrically opposed to it,—being, however, endowed with the property of destroying insect life to a certain degree, it may always be used with advantage where maggot is apprehended. Things of a like nature, as soot and wood ashes, may also be used, their caustic properties being, perhaps, still more obnoxious to the maggot than even quicklime. But one of the best substances I have known for destroying the larvæ of insects, maggots, and other pests, was a sort of refuse lime, which had imbibed the impurities of gas at the manufactory of that article. This substance had more the appearance of green copperas than anything else, and certainly was the most offensive article I ever had to deal with; but when wire worm, grub, caterpillar, or other pest of that kind infected the ground, it was a certain remedy; and, applied in winter, I do not think it injured anything in the growing season; on the contrary, it was beneficial. I should, therefore, advise its being tried on ground notoriously subject to the depredations of the maggot or similar evil.

It would be well here to point out one or two of the causes which encourage the maggot in Onions, which will, perhaps, assist in solving the question of its destruction. In most gardens it is advisable, and very highly so, to change the ground for each crop, so as to have that rotation so much insisted on. This is all very well, though I have seen a plot of ground that, I was told, had been cropt with Onions for more than twenty years in succession, and still bore well. But this is not generally advisable in private gardens. In managing the rotation, care ought to be taken not to allow the Onion to follow any of the Cabbage tribe, which are said to be prolific in the breeding of all kinds of enemies to the vegetable creation. Old gardens too, that have received their meed of rank dung without much lime or other counter agent, also favour the production of these enemies to the cultivation. And, lastly, the destruction of small birds, which live on these little opponents to good crops, has had a bad effect in many places; for I have often remarked, that the Onion

bed of the suburban amateur suffers more than that of the rural cottager. The proximity of the latter to the wood, hedge, or common, where the little warblers congregate in safety, and arrange their next days foray, is more free from Gooseberry caterpillar, wireworm, and maggot, than that of the wealthy citizen, whose garden is surrounded by brick walls and dwellings for a considerable distance, and has not the benefit of these natural balancers of the insect and vegetable world. It is certainly some consolation to the citizen to find, that in autumn his fruit crops suffer less than the country ones, from these said grub destroyers. Neither do wasps annoy him so much. But he must use artificial means to a greater extent than the country cultivator, to counteract such enemies as the Onion maggot, caterpillar, and other things in that way.

The science of chemistry has added many things to our stock of manures, and insect destroyers have also been increased in like manner. The refuse from some manufactories, producing such articles as soap, soda, sal ammoniac, vitriol, and other chemicals, of a kind far from agreeable to vegetation, have, nevertheless, been all found useful in a cultural point of view; for, when they failed to impart fertility to the soil, they destroyed the enemies to vegetation, and very often prepared the soil for the better action of other manures. I have not had sufficient experience in any of them to speak with certainty of their results. But I may add, that one of the most useful ingredients to the Onion bed is charcoal ashes, which may be used with perfect safety at any time, as it does not possess any of those poisonous qualities which make those above dangerous to meddle with. I cannot, therefore, without caution, advise the indiscriminate use of any of those chemicals alluded to, unless in small quantities, and some time before the crop is sown.

To the correspondent "X. X. Y. A.," whose inquiries for advice on the Onion maggot,—the press of other matters prevented being attended to before,—I would say, give the ground, intended for Onions the following year, a moderate salting in the autumn; ridge it, and be sure and turn it at least twice during the winter, when the ground is dry, or when there is sufficient frost to bear the person doing it. A little lime may be added just before sowing; and the last turning, or levelling, should be sufficiently early to insure a good friable surface for sowing, which ought to be the first of March. The turning in frosty weather will assist to expose all parts to the action of the weather, and thereby destroy the larvæ of insects that may be stored away. It will also enable birds to search out such things; and last, though not least, add materially to the fertility of the soil. If the latter be a shallow one, let it be trenched by all means as early as possible, keeping the top spit to the top as before; but dung or other refresher may be furnished to the bottom. This will have the effect of enabling the plant to resist the dry weather so common in June and July, for the Onion roots are deeper than is generally supposed. I have traced it two feet deep almost all over the bed, when the soil was favourable.

If our correspondent would try the effects of winter tilling as above, and use charcoal ashes at the time of sowing, I think he will be more likely to escape the devastations of the maggot than heretofore. I have never heard a complaint of Onions bladdering in the neck, or dying off, with the maggot, when this was done. Possibly soap, ashes, or some of the chemical refuse mentioned above may be equally efficacious; but, not having had experience in their action, I cannot take the responsibility of recommending them.

J. ROBSON.

REPLIES TO MANY QUESTIONS.

"S. A. wishes to know when she should pot *Tropæolum tricolorum*,—whether now, when the bulbs are quite at rest, or when they begin to vegetate? If not till then, whether the soil ought to be moistened now? Also, whether *Lilium lancifolium rubrum* should be potted in autumn, or early in spring? Also the best season for dividing greenhouse Ferns; a large plant of the *Maiden-Hair* she has, having quite overgrown the smaller sorts? S. A. will also be glad to know the best soils for *Tropæolums*, Ferns, and *Lilium lancifolium*."

WHEN TO POT *TROPÆOLUM TRICOLORUM*, &c.—Not so much depends upon this as upon the treatment afterwards. To simplify the matter, however, it may be as well to say, "Leave the potting alone until a thread-like shoot, or shoots, makes its appearance from the tubers." Previously to that time, the tubers should be kept almost covered entirely (the very point merely left out) in dry earth, or dry sand. Peat and loam, in a fibry state, with a little mixture of silver sand, and about one-sixth of very rotten old cowdung, that has previously been dried and sweetened, will grow and bloom these climbers to perfection. If the dung, of whatever kind, is not sweet and well aerated, use less of it in proportion, and confine it chiefly to the lower end of the pot next the drainage. In potting, the tuber should merely be covered, not sunk to any depth in the pot. Here also comes the question you propose as to moistening the soil. When you pot this, or any other tuber or bulb, comparatively in a state of rest, the soil should be in a medium state,—neither wet nor dry,—such as when grasped in the hand will retain the impression of your fingers after your hand is opened, but which will fall to pieces as soon as you lay it gently down on the potting bench. Such soil will long contain moisture enough for your tuber just beginning to grow; as, until roots are produced pretty freely, the tuber will supply the young shoot with nourishment from its stored-up matter.

Another question here presents itself,—namely, the size of pot to be used, the mode of watering, and the quantity of water to be given. The size of the pot must be greatly regulated by the size and freshness of the tuber. A pot eight or twelve inches in diameter will grow a fine specimen, and to this your trainer, whatever you prefer for this purpose, may at once be affixed. The sole difficulty arising from using a large pot at once will be found in the watering. As soon as planted, a very little drop of water may be given round the tuber, just to settle the earth about it. As you see it grow freely, and are sure that the roots are ramifying, let the water, when applied, extend as far as you judge the roots have gone; but by no means deluge all the earth in the pot until that earth has got roots ramifying through it. For want of this precaution, many such plants are irremediably injured; the young roots, instead of being in a healthy medium, having to struggle for existence in a soil with all the constituents of a stinking morass. If you cannot depend upon such careful watering, you had better pot your tuber in a four or six-inch pot, and then place it in the centre of a larger one; and when you judge the inner one to be full of roots, crack and break it with a hammer, so that the roots may have a free outlet. Of course, by this plan you confine your watering at first to the inner pot. With careful watering, potting finally at first is attended with least trouble.

WHEN TO POT *LILIUM LANCIFOLIUM RUBRUM*, &c.—The best time for this is not autumn, but spring, just as soon as the bulbs begin to shoot. The best soil for them is about equal divisions of heath soil, loam, and old dried cowdung. They will bloom best if divided but little; and the smaller bulbs should only be carefully removed, to furnish future stocks and large flowering bulbs at a future time. We do not

mean to say that the bulbs would be greatly injured by separating them singly, but they seldom bloom the following year so well as when merely divided, or repotted in a lump, after extricating some of the smaller bulbs. In winter they should be kept dryish, but left in the pots, and these not allowed to become dust-dry. In potting, keep the bulbs well down in the pot, so that the tops are three or four inches from the rim of the pot, which will permit of rich surface-dressings as young whorls of roots are thrown out from the base of the shoots. When the shoots are from twelve to eighteen inches long, the plants will relish weak manure water. The quantity of water must be regulated by the weather and the rate of growth, just as in the case of the *Tropæolum*, though the *Liliums* are less easily injured. We have known plants bloom well in the same pots for years.

DIVIDING GREENHOUSE FERNS.—The best time to divide these is just when fresh growth is taking place, generally in spring; but any time will do for house Ferns, unless when they are in a state of rest, and very actively growing, and sending up strong young fronds. Just when they begin to make fresh growth is the best time in all cases, as the roots take hold of the fresh soil at once, there being a reciprocal action between roots and the young shoots of fronds. It is advisable to keep the atmosphere moister and closer, and even warmer, after such division, in order that fresh growth may be at once accelerated. The best soil for *Maiden-Hairs* is about two parts turfy loam, and one of fibry peat, with about one-sixth of silver sand for established plants. For young plants give more peat, and a little sweet leaf mould.

R. FISH.

THE APPLE — ITS HABITS, CULTURE, &c.

At first sight, it may appear rather preposterous to offer observations under the above heading; but when we consider the various conditions and various degrees of success we meet with, there will appear ample room to offer a few remarks. It being alike esteemed by the Prince and the peasant, its appreciation is universal, and this is common to most countries. The chief facts with which we have to deal are the following:—*Soils, Climates, Situations, Habits, Diseases, Insects, and Fungi.*

As to *Soils*, there is no doubt the Apple prefers a sound loam, one rather inclined to adhesiveness, rather than the sandy principle. However, we find them grown tolerably well on a variety of soils,—on peaty, sandy, clayey, and on ordinary garden soils. But these have, in general, to be corrected, in some degree, to meet the requirements of this tree. In all cases, they prefer a sound bottom, where no stagnation exists. If such be a dry gravel, they require a good, sound, or adhesive soil above, and one of a good depth. On clays I have known them succeed with a very shallow surface soil, that being of a generous character. As for peaty soils, they, of course, require to be thoroughly drained, and should go through a course of vegetable culture previous, in order to consolidate them. Sandy soils require strengthening by more solid materials, such as adhesive loams, marls, and even a mellow clay. But, if I must give a preference to any particular soil, it must be a sound loam of thirty inches in depth, on a dry gravel.

Climate is our next consideration. This we cannot rule, of course; but we may select, and even correct. I believe that many kinds succeed better in what is termed a cold climate, than in the closeness of a warm kitchen garden; at the same time, there are other and tender kinds which need a degree of coddling, such as the kitchen garden affords. But there is much in

locality, and over this part of the subject we have little control. What has made Devon and Hereford into such orchard districts, is a fair subject for inquiry. It cannot be soil alone; it cannot be in any peculiar compost; it is probably, and in great part, an atmospheric affair. But the fact is, that whatever attempts have been made, and many have, doubtless, been made in past generations, they stand unrivalled still, in the same way as Cheshire for its cheese. As to the amelioration of any given climate, we all know that thorough drainage in damp districts will accomplish wonders, not only for fruits, but also for vegetables, and last, though not least, for mankind. I speak here of the amelioration of the atmosphere, irrespective of the soil, as belonging to the present portion of our subject.

We next come to the consideration of the different habits of different kinds. This is very considerable, and concerns both the soil and the atmosphere. To plant weak, delicate, and short-jointed kinds on poor, hot, upland soils, would be as improper a proceeding as to plant gross and robust kinds on deep and enriched soils containing much moisture. Some kinds will enjoy a fair proportion of manures, others may not be trusted with it.

But *Insects* claim a consideration, and this, too, bears on the question of soils. Hot and dry, or extremely shallow soils, are ever favourable to their production,—at least, of some kinds; and the same may be said of a dry condition of air. Therefore, in planting orchards, or even single trees, regard should be had to this fact. Nothing gratifies the red spider more than to be able to cast his lot on some unfortunate tree that is always liable to drought, through a shallow, loose, and incoherent soil. The aphid family would rather seem to revel on healthy subjects; albeit, they soon make them unhealthy.

Then we have a host of caterpillars, as also scaly insects, and lastly, the worst of all, the American blight. As to the caterpillars, I am not assured that they concern the question of soil,—perhaps they have more to do with atmospheric conditions. There is no preventive, as far as I am aware, to apply to these insects; curative measures,—as handpicking, &c., are generally resorted to. As to the scale, that I can affirm demands preventive measures. I have for many years observed, that the scale is almost certain to attack Apple trees of considerable size, when removed, and a dry period supervenes in June. And this points to the propriety of taking extra means to prevent it by liberal waterings in due season,—even using liquid manures freely.

The American blight is all but invincible. We have had hundreds of recipes during the last fifty years, and, I believe, not one has obtained universal sanction.

As concerns soils, I am not aware whether any preventive measures can be employed, or whether they have any bearing, curative measures being generally adopted.

And now we come to that, perhaps, almost invisible pest, fungi. But want of space compels our remarks on this and the remaining heads to be deferred till next week.

R. ERRINGTON.

BLACK EAGLE GRAPE.

WE have been favoured by a correspondent with the following information relative to this Grape, mentioned in our last number:—

“The *Black Eagle* is well known in Lancashire. I have it in pots; but I do not mean to grow it any more. It is, no doubt, a very fine bearer, but the berries are small, and the bunches anything but handsome. At all events, it ought not to be grown in the same house as the *Black Hamburg*.”

—W. C.

NOTES ON THE DEVELOPMENT OF BULBS AND TUBERS.

By THILO IRMISCH.

(Abridged from the German original.)

(Continued from page 314.)

Alstroemeria Pelegrina, L.

In contradistinction to all those Liliaceæ which have been submitted to examination, the Amaryllidæ exhibit lateral peduncles and terminal primary buds. It becomes, then, matter of interest, to examine such Amaryllidæ as are not bulbiferous, and which Endlicher calls Anomalæ, to see whether they, like the true Amaryllidæ and Narcisseæ, have lateral peduncles. To this end, I have studied *Alstroemeria Pelegrina*, and have arrived at the following result:—

The horizontal axis from which the more or less tuberiform, incrassated roots spring forth, and which are branched at their tips, is clothed with short broad scales, or a rather white and thin substance. One of these scales (Fig. 1), encloses

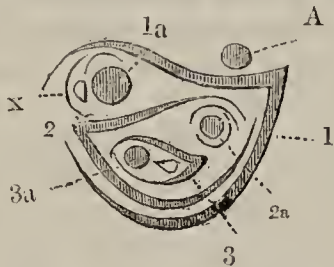
*Alstroemeria Pelegrina*.

Fig. 1. Imaginary horizontal section to explain the position of the leaves, peduncles, &c.

A, 1a, 2a, 3a. peduncles.
1, 2, 3. scales.
x. second leaf.

with its margins the young peduncle (1 a), which it is well known is frequently sterile, and in the axil formed by the scale with the peduncle there is a bud. The outer leaf (2) of this is placed with its back towards the peduncle, though rather obliquely, and encloses again with its margin a peduncle (2 a), as also another bud (3), in the axil formed with it, which again repeats the same structure. The peduncle, then, is terminal, the primary bud axillary, and the plant presents entirely in this respect the phenomena of *Aloe margaritifera*, only in the latter everything is plainer, on account of the vertical axis and perfect leaves. The above results can be obtained only in *Alstroemeria* from the young axis.

In the axil of the second leaf (x)—the leaf which encloses the primary bud reckoned as the first—at the base of the peduncle, we frequently observe a second smaller bud. If this is developed the main axis becomes branched.

Liparis Loeselii.

The remains of the organs of last year are found at the base of the flowering plant; they are reduced to a bulb-like conical or ovate body, which is, however, compressed on two sides, so as to present two flat surfaces and two rounded keels; on the outside are the sheathing bases of many leaves: the most external of which are decayed, the innermost, though dead, tolerably firm, and threaded by strong longitudinal nerves, which are separated from each other by thin parenchym. The innermost sheath has a very narrow orifice, in which the nerves coalesce, and the parenchym is much thickened. The dry peduncle of the former year often protrudes from this aperture. These sheaths encompass, more or less, the base of this year's plant. They arise from a generally short, horizontal axis, of but moderate strength, from which also the fibrous roots spring, which for the most part perforate the leaves, and which now, like the leaves, are dead.

After the sheaths are removed, a firm, green, smooth, almost shining tuber is found, about the size of a nail, and still fresh. At its base it is united with the portion of the axil which bears the leaves, bearing above the withered peduncle, or at least exhibiting the scar of its point of attachment. The only part of last year's plant which is fresh is this tuber: on one of its angles there is a hollow, and in this the plant of the present year is connected with the tuber.

In the growing plant of this year we find always five leaves; the two outer or lower merely consist at the time of flowering of a fissured sheath or lamina; the third is gene-

rally a tolerably high, unwithered sheath, merely developed into a short lamina; the fourth and fifth are perfect leaves, which have, however, a closed sheath, two to three lines high. The first stands with its back to last year's tuber; the second slightly alternates with the first, the angle of divergence being about 90°; the third with the second (about 180°); the fourth with the third; and, finally, the fifth with the fourth. The second and fourth are sometimes to the right of last year's tuber, in which case the third and fifth are consequently to its left, but sometimes the contrary takes place. The corresponding internodes are generally undeveloped, and the filiform roots clothed with delicate hairs, which are about an inch long, and rise from the axis, and in this case perforate the base of the leaves. The internodes are rarely so developed, that at least those between the lower leaves are no longer concealed by them, in which case the position of the leaves, as indicated above, is not so easily visible.

Immediately above the fifth leaf, the axis at the time of flowering is extremely thickened, and on this tuberiform body stands the biangular peduncle, clothed only with a few bracts.

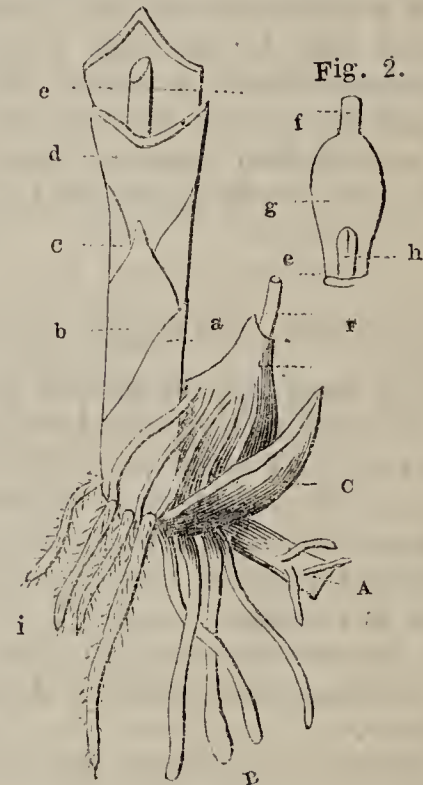


Fig. 1.

Liparis Loeselii.

Fig. 1. Base of flowering plant.

A. axis.
B. dead roots.
i. living roots.
C. outer decayed leaf.
F. old peduncle.

Fig. 1. a, b, c, sheathing scales.

d, e, leaves.
f. peduncle.

Fig. 2. e. point of attachment of second leaf.

f. peduncle.

g. young tuber.

h. principal bud.

A line through the greatest diameter of this tube, if produced, passes on the one side through the medial line of the second and fourth, and on the other through that of the third and fifth leaf, and since the middle nerve of the fourth and fifth projects externally like a keel, the base of the young plant appears broadly compressed. In the usual case, in which the internodes are not developed, the plant of this year is closely allied to last year's tuber, and consequently the larger diameter of the first is not in the same direction with that of the last, but at right angles to each other. The more the internodes are extended (and they measure together sometimes an inch) the farther the lower leaves are separated from the upper, and the young tuber from that of the previous year, the less marked is this relation of the young plant to the old tuber.

In the axil formed by the fifth leaf with the young tuber there is a little hollow in the latter, containing the young, ovate, rather broadly compressed bud, which is to produce

leaves and flowers the next year. The major axis of this is again at right angles to that of the young tuber.

After flowering, when the seed is ripe, the parts of the vegetating plant die off gradually; meanwhile, however, the young tuber swells, that of the former year shrinking, and at last entirely perishing. The sheaths of the leaves, which expand with the tuber, namely the fourth and fifth, protect the bud from external injury. This is perfectly developed the next year, breaking through the base of the fifth leaf and the front of the sheath of the fourth. The same formation of bulbs takes place in plants which do not flower; the tubers cannot, therefore, be considered merely as the base of the peduncle.

Little acute gemmæ are often developed from the last year's tuber, generally at its crown, and not in the axils of the leaves; these soon fall off and become independent.

It is clear that the plant changes its place annually. If the axis below the tube always remains short, and if the third through every cycle stands always to the right or left of the last preceding old tuber, the same position would again be attained in the fifth annual period. The premises do not, however, strictly hold good.

MISCELLANEOUS PLANTS.

Primula officinalis.

The simplest case is that in which a single flower-stem only is produced on one plant. This, rising in the midst of the leaves which rest upon the ground, is terminal. In the axil, which is formed between it and the uppermost leaf, is seated the principal bud, whose under leaves are developed in the course of the same year, while the inner leaves, surrounded by a few scales, remain small. It produces the next year the first flower-stem. There are buds also in the axils of the lower leaves at the base of the axis; the lower these leaves are seated the smaller the bud.

More frequently, however, the principal bud develops all the leaves of its axis (an axis of the second order as regards that which produced this year the first flower-stem), and gives rise to a second peduncle.

A bud is formed on the axis of this second flower-stem, between it and the uppermost leaf, which may either remain till the following year, and then produce a flower-stem, or may unfold its leaves and their peduncle (the third of the whole plant) during the present year, in which case a bud is found in the axil of the uppermost leaf of the axis of the third order, which, in the next year, will produce its flower-stem.

The peduncles are, therefore, always terminal, since the second breaks out by no means immediately from the axil of the uppermost leaf of the axis of the first order, but appears on the top of a leafy branch (the axis of the second order), the internodes of which are not, however, developed. The same holds good with the third head of flowers, with respect to the axis of the second order.

It was remarked that buds occur also in the axils of the lower leaves of the axis of the first order. These buds sometimes produce peduncles, but they are developed later than the blossom at the top of the axis of the second or even of the third order.

At the period of flowering, the leaves of the first axis are frequently withered; the peduncles which belong to it stand near, but externally, to the leaves which belong to the axis of the second order. In barren plants the principal bud is naturally terminal, and no part of the upper portion of the axis dies. The whole greatly resembles *Alisma plantago*; but in *Primula* the base of the axis lasts longer, but at length dies beneath, since it is nourished only by accessory roots, inasmuch as the main root, which was present in the seedlings, soon perishes.

Oxalis.

In a state of rest late in autumn, the bulbs of *O. tetraphylla* have the following composition:—On the outside are many dry scales, on whose tips the remains, or at least the scars, of the dead leaves are visible; below these dry scales are fresh, rather fleshy broad scales; these are the basal portions of leaves; the free end of the stipules is visible at their tips, between which are the rudimentary petiole and lamina. The basal axis which bears all these parts is very low.

The roots break through the outer integument in spring,

and are much branched. Many of these are delicate, but others are tuberiform, like those which frequently accompany the newly formed corms of *Crocus vernus*; occasionally all are of this description. The outer fresh scales do not develop their lamina, but the inner only. In the axils of the lower scales there are buds, which in the course of the summer increase in size and form into bulbs. The outer leaves of these axillary bulbs are scale-like, and in general dry up very early; then follow perfect leaves, and then again scales. During the first summer they frequently produce no leaves, especially those bulbs which are highest on the axis, but are formed of scales only.

In the axils of the uppermost scales and leaves stand the peduncles, on which are seated only a few small bracts.

The uppermost leaves form again a terminal bulb, which, in consequence of the decay of this year's axis and leaves, becomes independent, and flowers the year following, as do the greater axillary bulbs, which equally become isolated. It seems very difficult to deny the existence of bulbs in these plants.

In *Oxalis acetosella* the main shoot is equally terminal. It elongates after the manner of a runner, like *Adoxa moschatellina*; its first leaves are true leaves. Lateral shoots also are present, so that *O. acetosella* has a strong agreement with *Adoxa* in the arrangement of its parts, much as it differs in other respects. The main axis in *O. acetosella* is not, however, so transitory; for the stem, whose internodes are sometimes much developed, though occasionally very short, last at least a year. The leaves die down as far only as the short fleshy basilar part, which is articulated with the petiole and the peduncles in their axils. The main axis is elongated yearly by means of the terminal bud.

In *O. stricta*, on the contrary, the whole axis (which, with respect to last year's axis, is lateral) dies off with the flower-bearing branches on it, and only the runner-like shoots remain, which spring from the subterranean portions of the primary axis, and are somewhat fleshy to their extremities. They are clothed with scales, from whose axils again fleshy branches frequently spring, and have internodes about half an inch long, giving rise to the scattered, delicate, branched roots, while still connected with the parent axis. In the following year they produce a peduncle, and die after the formation of the fleshy branches. This plant then must be reckoned as perennial, and not as biennial, with Koeh in his Synopsis. Otherwise, to be consistent, *Gagea*, *Tulipa*, *Epilobium palustre*, *Mentha arvensis*, and *Stachys palustris* must be reckoned as triennials. In true biennials, as in *Cirsium lanceolatum*, the course is quite different.

In *O. corniculata* the whole plant perishes annually, and there is nothing perennial about it. The different habit of *O. corniculata* and *O. stricta* depends on this, that in the first the primary axis remains proportionally short, while the procumbent, frequently rooting branches, which spring from the axils of the four or five lower leaves, spread out, but in *O. stricta* the primary axis is especially developed, and has long internodes, while the branches in the axils of nine or ten lower leaves remain far shorter than in *O. corniculata*. These points are not in general sufficiently distinguished in their specific characters. In both, the first appendage of the branch is a small, lanceolate scale, as is the case also in the lateral runners of *O. acetosella*.

Anemone Hepatica.

The common *Hepatica* presents several points of interest in its construction. If it is examined in spring during the time of flowering, we find at the top of the main axis, from whose lower part numerous branched roots are developed, thickly clothed with fine hairs, the coriaceous leaves of the former, here and there withered at the margin, and bearing about them the signs of approaching decay. Since the internodes are not developed, they stand with the base of one directly on that of another. Immediately above these leaves, the internodes in this case also being undeveloped, there are from three to eight membranaceous, imbricated scales, exhibiting slight traces of a tendency to form a lamina, without, however, there being any gradual transition from the perfect leaves to these scales.

In the axil of the lowest scale, and, if the number of scales is large, in that of the second, third, and fourth also, there

are little buds, whose outer coats are membranaceous scales, the outermost always seated with its back to the main axis, and which enclose the rudiments of perfect, three-lobed leaves. In the axils of the scales above these are the solitary peduncles. In the axil, however, of the last, and sometimes of the last but one, there seems at first to be no peduncle, but, on close examination, the rudiments of a flower appear under the guise of a little bud borne by a stem, frequently not half a line long, in which traces of the different organs of the blossom are discernible. This flower is, however, frequently developed in all its parts, and it is then plain that the uppermost scale does not stand more than half way up the portion of the main axis, which is clothed with peduncles.

Close above the uppermost peduncle, or its rudiment, and not in the axil which the last scale forms with the peduncle, but on the other side of it, are the still undeveloped leaves, whose lobes are rolled in, smooth and naked on the inner, but clothed with long silky hairs on the outer surface. The highest scale encloses these leaves, yet not with the middle of its disc, but with its two margins, which extend beyond the last peduncle, since the lowest leaf alternates with the highest scale. In the axil of the lowest new leaf there is often a perfect blossom on a long peduncle; but this blossom often remains in a rudimentary state, or is completely abortive. The leaves are perfectly developed after flowering, and in summer, or still more plainly in autumn, we find the scales again at the top of the main axis, and the above-described lateral buds and peduncles in their axils, all compressed into a thick knob. The structures of a new cycle of vegetation begin here with the scales, and close with the new leaves; and these are all on one and the same axis. The peduncles are axillary. The new main bud, which towards the end of the summer is quite formed, is terminal in the centre of the leaves.

A. Hepatica agrees, in the arrangement of the parts, with *Convallaria majalis*, in which the lateral peduncle is surrounded by imperfect leaves, and rises from its point of origin at the moment when the leaves burst forth.—(*Horticultural Society's Journal*.)

LILIES OF THE FIELD.

We are favoured with another extract from a letter which has been received from Abdallah Asmar, the Maronite physician, about the Lilies of the Field, which, as in a recent number, we again give in his own words:—

"As to the red Lilies I told you of, I was misinformed by some shepherds. I asked them to bring me some roots, which they did. I planted them here, and some are in flower, but not red; some petals of the corolla are reddish-blue, others are azure. If you wish the sort, I send them you."

[This is the last account from Abdallah Asmar. These shepherds of the Lebanon must have a traditional idea of what the Lily of the Field was; and, if I mistake not, I read somewhere, that Sir E. Smith was of their opinion; for he, too, believed that this reddish-blue and azure Lily was the one referred to in the Sermon on the Mount, provided the Lily in question is the *Ixiolirion montanum*, the only Lily in all Syria, which comes nearest Abdallah's quaint description. *Ixiolirion montanum*, or the *Amaryllis montana* of Redoute, grows as abundantly in that part of Syria as the Blue Bells, or wild Hyacinths, do in our own country. Colonel Chesney found it in Palestine, in the most brilliant profusion, and it has not been discovered anywhere out of Syria. Whereas, the *Lilium Chalcedonicum*, or scarlet Martagon, the last Lily which science has elevated to the distinction of being the Lily of the Field, is growing wild in every country from Galilee to Greece. But we cannot determine whether it is really a true native of any particular place in the whole distance. Like the Potato, it may have overrun the countries of the old world, through being so gay, as the Potato has for its usefulness. It may have been a stranger in Galilee, at the time of our Saviour, although it appears to have been as wild then as at the present day. But the blue Lily, the *Ixiolirion montanum*, has never been out of that part of Syria. Dr. Lindley, on the authority of Sir John Bowring, then Dr. Bowring, jumped to the conclusion that the scarlet Martagon was the Lily of the Field, because that traveller happened to pass through the country when the Martagon was in bloom. If he had happened to be

a month earlier, or a month later, he would have seen different Lilies in bloom, and the blue Ixia-like Lily, *Ixiolirion*, would be one of them. All that scientific investigation can make out to satisfaction, on this question, is, that the white Lily, *Lilium candidum*, was not the Lily of the Scriptures, because the white Lily has not been found hitherto in the Holy Land, south of the Lebanon. But, supposing the merchants and pilgrims, who have brought the supposed holy Lily from the valleys on the way to Jerusalem to our correspondent, Abdallah Asmar, to have been more successful than the European naturalists and travellers, who botanised the country from Dan to Beersheba ten times over, and succeeded in establishing the fact that the white Lily grows wild in those valleys, that would not settle the question, that the white Lily was in reality the Lily of the Field. It would be just as easy to make out and settle, that the white Lily was introduced to Jerusalem from the country of the Maronites, to King Solomon, along with the timber from the same country, to build the temple with, that it outlived history in those highlands, after escaping from cultivation; but that, down on the plains of Galilee and Samaria, the climate was too hot for it to survive without cultivation;—on the supposition that it found its way from Jerusalem to the low country, and, therefore, that it could not possibly be known to the bulk of the congregation on the Mount. Plain common sense will make the question as obvious to the common worldly, as scientific research can ever make it to the rest of mankind. Then the most obvious, and plain common sense is this, that no particular Lily was meant at all; that in those times, and down to the days of Linnæus, the "Lilies of the Field" was the common phrase for all bulbous plants; and that science itself did not till then go farther than to say *Lilio narcissus* to all such bulbs. In the Holy Land, as in many other places where a hot, dry season scorches the vegetation, and is succeeded by the "later rain," or a rainy season, the bulbous plants are the first to cover the earth with flowers; the annuals come next; the herbaceous plants are the last to bloom. Therefore, the whole plain of Galilee, and on to Samaria, and still farther, to the river Kishon, where Elijah killed the prophets of Baal, the bulbs are the spring flowers, the Lilies of the Field. They made the greatest impression, and they were well known to everyone who listened to the Sermon on the Mount. The same kind of expression, as I have just said, came down, in one form or another, to the days of Linnæus. The *Liliastiums* were the Lilies of the Field. The *Lilio asphodels*, the *Lilio fritillarias*, the *Lilio hyacinthus*, and the *Lilio narcissus*, would make up all the spring flowers of Samaria, and "Solomon, in all his glory, was not arrayed like one of these."

The *Ixiolirion montanum*, the Blue Bells of the Holy Land, Mr. Beaton adds, once, and only once, flowered in England: he had the opportunity of seeing it in bloom, about the middle of May. It is a slender-growing plant, very much like the growth of a long-leaved Ixia. The outer sepals, or what represents the calyx, have a dull metallic tinge, such as that on the blue branching Larkspur,—reddish blue is by no means a bad way of expressing the tinge, which leads one to believe that *Ixiolirion montanum* is the kind referred to. It would, indeed, be a very desirable plant for a spring flower with us, and would need the same treatment as border or bed Hyacinths, but would require a lighter soil, such as would do for *Gladiolus*.]

ON THE SLAUGHTER OF QUEEN BEES.

A SLIGHT observer of bees knows, that, after the swarming season is past, the drones, or males, are destroyed by the workers. But it is only the curious who understand how the supernumerary queens are slaughtered,—an event which I have noticed generally happens after the old queen has left the hive with the first swarm, leaving the embryos of several young queens in their cells. The enmity between queen bees causes the first-hatched ones to attack the other ones in the cells. The bees, however, defend these, and the head queen in a rage quits the hive with part of the bees, which makes a second swarm. The same process goes on until the next swarm, but often with more uproar in the hive, owing to several queens escaping from their cells at once. But only one is suffered to remain in the hive; the head queen in the swarm is sure to destroy the rest as soon as the bees

settle. I may here note, that the bees seem to show no opposition to the deadly attacks of the queen on her rivals, after they have left their cells, and likewise, that when bad weather, or some other cause difficult to explain, prevents the old queen from leaving the hive before her offspring of brood queens are hatched, the instant that she hears them her fury is roused, and she tears open the cells, inserts her abdomen, and stings to death the whole stock of queens that were designed to establish fresh colonies. When this happens, Dunbar observes that the bees show no opposition to the will of the old queen, as they do that of the young ones already noticed. I have doubts, however, on this, and think I said so in my reply to him, in connection with the calling of the queen bee, in Loudon's "Gardeners' Magazine" for 1839. But, be that as it may, young queens in like manner tear open the cells and destroy the supernumerary embryo queens, as also the hatched ones, as soon as swarming has ceased in the stocks.—J. WIGHTON.

ON THE SANDS.

"It is the sea, it is the sea,
In all its vague immensity,
Feeding and darkening in the distance!
Silent, majestic, and slow,
The white ships haunt it to and fro,
With all their ghostly sails unfurled,
As phantoms from another world
Haunt the dim confines of existence."

LONGFELLOW.

GLORIOUS autumn weather, hazy mornings, dazzling days of sunshine, the weather to be depended on, and all green and flowery things at their best! After a cold and stormy July, August came in truthful to her traditional character as the month of harvest, and rich and poor alike are now inhaling the odours of wild Thyme, or the fresh bracing breezes that carry the salt spray right into the green coves among the white Sedum, and the Furze, and the sea Lavender. All the world and his wife have taken to dining on the sands, and all the mythology they remember is about Neptune and the Tritons, just sufficient to give a zest to their seasonable pleasures. That we are still a maritime people, let the crowds on every slip of approachable seashore now testify; and that the water-pot of aquaria has not been banished from the domestic zodiac, witness the anxious search for sea creatures, the ladies especially, giving their heart and soul to minute inspections of boulders, rock-pools, and fringes of dripping Ulva. There stretches the bright beach that blinds the eyes with its glare of straw-colour, as the sun blazes alike over sea and sand, and snowy cliff, and towering moorland. The sand hillocks are phosphorescent in their sunny glories, and wherever the eye catches sight of a patch of purple heather on the upland, it has the brightness and isolation of a jet of subterranean fire. The touch of brown on the Ferns and Peats that fringe the slopes towards the sea, add to the intensity of the colouring; and, before the bright panorama, rolls the majestic sea,—in sheets of azure blue and emerald green, flecked here and there with snowflakes, and dashed with broad shadows from the clouds and the distant rocks,—which, with all its fret of breakers, and the sublime muttering of the surf along the shore in its expansive vastness, conveys the idea of a grand and everlasting repose.

"Thou glorious mirror, where the Almighty
Glasses itself in tempests; in all time, form
Calm or convulsed—in breeze, or gale;
Icing the pole, or in the torrid elime, or storm,
Dark-heaving, boundless, endless, and sublime;
The image of eternity—the throne
Of the Invisible; even from out thy slime
The monsters of the deep are made."

If by "monsters" Byron implies things of huge life and growth, then it is not for such we find our way to the sands. But "the slime" is wealthy in wonders; it is all life; every gritty edge swarms with myriads of creatures, every frond of Algæ is peopled, and, among the fissures of the honey-combed rocks near the shore, and far out to the depth of the lowest tide, the hand and the eye may busy themselves with the inhabitants of Neptune's kingdom, and make acquaintance with creatures that have their place and their work in the grand economy of the omnipotent Master of the Sea. The sea is His, and He has given man command over its creatures for

sustenance, for instruction, and for means to marvel at His wisdom. Let us explore, for a little while, among the shifting pebbles and slippery meadows of sea-weed, the tracings of God's handwriting on the bottom of the sea.

If you want to study marine Zoology at the sea-side, go not to the fashionable promenades. The broad shallows where fashion finds its pleasure, and novices take their daily strolls, are just the spots that are poorest in natural history. The best marine hunting grounds are the deep inlets where the tide leaves some water even at ebb, and where the store is made up of tumbled rocks and quiet hollows; and, though there is sometimes a little danger in venturing too boldly on such spots, a quick eye will be pretty sure to detect some sort of beaten path to the water's edge, and to the best of rock-pools. It is in such quiet, splashy nooks, that the most valued treasures are cast up, and preserved within reach; whereas, on the sloping sands there is little to be found beyond mere drift, of no value. Take with you a good-sized wicker basket, a hammer, a chisel, and a few stone-jars, with cords tied round to swing them by: they should each hold a quart. A small hand-net is also essential, and if you take an attendant, let him put a small crow-bar on his shoulder, and swing the basket on it.

Now you are off. The tide is out, and if it is the time of spring tide, your chances are doubled,* for then a greater space is left bare, and many true Pelayics may be met with among the lowest of the ledges. Peep into the first pool you come to, and you will see nothing. But wait a minute and be quiet, and a rippling of the surface will advise you that the creatures have got over their alarm. After a few seconds dip your hand-net quickly, and ten to one you have a prawn or two, a blenny, a stickleback, or a goby. Fill one of your jars quickly, and empty the contents of the net into it, and then wait again. Next time a soldier crab may come out from under a ledge; if so, bag him by a dexterous dip of the net; but be in no hurry to handle him, or you may bleed. When there seems no more chance of catching lively creatures, begin to hunt for the more torpid kinds. You will see, perhaps, a little beach of fine pebbles at the bottom of the pool, and no sign of life anywhere amongst it. Pass your hand rather deeply into it, and bring forth a good handful, and turn it out on the nearest flat stone; ten to one you will find one or two sea flowers that had made themselves jackets of the grit, and so hid in ambush. The lovely *Crassikorius* or coriaceous *Anemone* loves to hide in this way, entirely covered with a coat of pebbles; but after a short stay in the aquarium he shakes them off, and comes out in his true colours, a "gem of the sea." Next, lift up the banners of Algæ, and examine their under sides for other sea flowers; and, as you meet with specimens, break away the frond to which they are attached, rather than handle the creatures. If fixed on the rock, defer attempting to remove them till you have obtained as many as can be got without using the chisel. Among the oyster-shells, bits of tile, and glass bottles, often found in these hollows, you are pretty sure to find Anemones, and in every such case take them as they are, without attempting their removal from the nidus. Last of all, determine among those that are attached to the rocks which you intend to have. If you can, by a smart blow with hammer and chisel, detach a fragment with the creatures on it, you will have gained a prize, because they have a tenfold chance of prospering afterwards, if never touched with the hand. But it may be impossible, even by working under water, to break away the part you want; the last resource to detach them is sleight of hand. Bear in mind what we have already noted down, that Hercules is vulnerable in the heel, and you must be particularly careful not to rupture the base of an Anemone. Gather your fingers round the stem, so as to enclose the whole of it,—the touch will cause it to contract so as to be easier of handling. Then work the thumb-nail under one side of the base, and loosen it from its foothold steadily, and without any tearing or jerking. It tries your patience, but it loosens, lets go, and at last you have it. Drop it into the vessel, and waste not a moment; one jar will hold a vast quantity, and the creatures will not fight nor injure each other till their alarm is over. Before you finish that particular pool select your marine plants. Get as many tufts of Ulva and Enteromorpha as

* The spring tides for the next two months occur on the following dates:—August 24th; September 7th and 23rd; October 7th and 22nd.

you can; every one must be on a piece of its native rock, or it will soon perish. Bright green, and bright red Algæ are always useful; but brown, purple, and olive-coloured kinds are of little use, except as botanical specimens. *Rhodomenia palmata*, and *Delesseria sanguinea*, are lovely things, which you may meet with in pools at the lowest water-line: if you cannot easily detach them, cut them off close at the base; and, if bound to a stone and thrown into a tank, they will live some weeks, to be removed as soon as they show signs of decay. This is a pretty and instructive way of using many other kinds which it is difficult to get complete. A frond of *Nitophyllum punctatum* is a fine ornament, and a tuft of *Griffithsia*, and a single leaf of the Ladies Tresses, *Laminaria phyllitidis*, are two other subjects suited for the same use. When you have despoiled the pool of its treasures, pull away a handful of fresh sea-weed, of any kind, and lay at the bottom of the basket. Place the plant specimens on it, and cover with a little more, and then hie away to another spot.

(To be continued.)

GREENHOUSE FERNS.

FOLLOWING out the idea, that there are more persons able to grow Ferns in a greenhouse than in a stove, as such buildings are more common than stoves, I shall in this paper, or division of my subject, treat upon Ferns that will thrive in a house, the temperature of which is kept through winter a few degrees above the freezing point. Many of the more rare or beautiful hardy Ferns will thrive exceedingly well in such a house. Though greenhouses are generally crowded with plants of various kinds through the winter, which are set out of doors in summer, yet many Ferns may be kept in it notwithstanding; and on this account, that their fronds die off in the autumn, and that the plants are dormant through the winter; consequently, they may be kept under the stages or platforms, or on shelves against the back wall. In such a state, they require but little care, only to be kept moderately moist. The evergreen varieties, however, must have due attention paid to their having a full share of air, light, and moisture.

Soil for Greenhouse Ferns.—This section of the Fern tribe requires the same kind of soil as those that are grown in stoves. The compost should consist of that light, open, fibry kind of peat which may be found where the wild Ferns abound, —amongst decayed moss, fibry roots, and decaying leaves. The common black peat is unfit for this purpose, being too heavy, and holding water too much; in fact, when thoroughly wet, no Ferns will live in it. Large-growing Ferns would thrive all the better for having added to the fibrous peat about one-third of turfy loam, taken very thinly off a pasture, and chopped into pieces varying from the size of a boy's marble to a hen's egg. Use both the peat and loam without sifting; mix them well together, and add silver sand enough to give the compost a sandy character. For small-growing species, use the peat without loam, only adding the sand. For seedlings, or very young plants of any kind, put the compost through a half-inch-meshed sieve.

Drainage.—The best material for drainage is undoubtedly broken pots; at least, I may say so, without fear of contradiction, for the drainage at the bottom of the pots. Some recommend cinders, others moss, and some oyster-shells. The cinders I object to, because they are difficult to pick out from amongst the roots on repotting; the moss when decaying becomes a muddy stagnant mass, and oyster-shells cannot always be obtained; whereas, unfortunately, broken pots are always (where pots are used in any quantity) handy,—they may be removed from the ball easily, they let the superfluous water pass off freely; and the Fern roots seem to like this kind of drainage the best of any that I have used. To keep the soil in large pots, open and pervious to water, I have used moderate-sized pieces of charcoal, and even sandstone with advantage.

Potting.—The proper season for this operation is early in spring, just when the young fronds begin to push forth. Examine the deciduous species, and if any show signs of life, give them a good watering, to moisten the soil, a week previous to repotting. Have the pots in readiness—if new, soak them in water for an hour, and set them to dry for a day; if old, let them be washed thoroughly clean. Then get ready

the drainage materials. Break the potsherds into three sizes, —a few, large enough to cover the holes at the bottom of the pots, a larger number of less size, and a greater quantity about the size of Marrowfat Peas. The compost should be got in and be neither dry nor wet.

All these points having been duly attended to, then bring out the plants into the potting shed. In potting, I always find it advantageous to pot all of one size first. It is immaterial whether you begin with the largest or the smallest. Let this operation be done quickly, I mean all at once. Plants suffer greatly by being kept too long in the potting shed, exposed, probably, to cold draughts of air, or, if not exposed to that, suffering for the want of light. Hence, I recommend all to be ready, so that no delay may take place in getting the plants repotted and back again to their home. During the operation see that all decayed fronds are removed, and also any roots that may be dead. Shake off the loose soil and old drainage, and, in repotting, leave sufficient space, according to the size of each plant, below the rim of the pot, to hold water enough to thoroughly wet the entire ball of earth. *Many a fine Fern has perished by neglecting this point.* When all are finished, give a good watering, and return them to their place in the greenhouse, previous to which there will be a good opportunity to wash the stages, platforms, &c., so that all may be fresh, tidy, and clean, giving the plants and the house a cheerful, pleasant appearance.

Watering.—Attention should now be paid to giving due supplies of water, especially during the growing season. Though the Ferns love water, and must never want it, yet to give them this necessary element in excess is very injurious, especially to the more delicate kinds, such as the Gold and Silver-leaved *Gymnogrammas*, some *Cheilanthes*, and others of like character. Watch such daily, and give water when the surface is dry; give enough at once to wet the whole of the soil in the pots, and let it become dry on the surface again before giving any more. In dry, hot weather use the syringe freely, wetting the walls and floors thoroughly at least twice a day, morning and evening. Use rain water in syringing over the foliage.

Air.—I need scarcely direct that air must be given regularly. In spring and summer, indeed, the house should have air, both night and day, in abundance. Every cultivator will soon find this necessary. If convenient, a slight shade, such as Shaw's Tiffany affords, will be of great service in hot sunshine.

Insects.—The thrip is the greatest enemy to Ferns. It may be kept under by frequent moderate smokings of tobacco. In very bad cases, cut off the fronds most affected, and burn them, and wash the remainder with tobacco water and sulphur vivum, syringing it off again the next day. The brown scale must be rubbed off, and the plants washed with the above mixture. I have received some plants from abroad so infested with both white and brown scale, that I found it necessary to cut off all the fronds, and watch the young ones, and keep them clean as they advance in growth.

My allotted space being now full, I must delay the list of kinds suitable for a greenhouse to another opportunity.—T. APPLEBY.

QUERIES AND ANSWERS.

RAISING FERNS FROM SEED.

"I have for the last two years been raising Ferns from seed, and have been partially successful; but have frequently been annoyed by a sort of black mould, or fungus, which spreads over the surface of the sand, destroying the young plant wherever it goes. Can you tell me how it may be prevented? I fill the pot, or pan, three-parts full with crocks, then a little chopped moss, then a layer of peat, on that a little silver sand, and a few small lumps of sandstone on the surface; covering with a bellglass, and setting the pan in a feeder well supplied with water, in various degrees of temperature.

"Will you also kindly give me a few hints as to the most successful method of growing the filmy Fern?"—SALOPIAN.

[We, too, have been bothered by the same black mould, or fungus, on our seedlings; and we have been told that the juice, or moisture, from soddened peat, rising to the surface through

the porous attraction of the sandstone, was mainly the cause of it, or, at all events, a great encourager of it. But we believe that that depends chiefly on the kind of stone used; the kind of spongy peat may also have a share in it. We have never used any kind of stone since, either for seeds, or seedlings, or for plants in pots. The best of all materials to keep the soil free, open, and operative, so to speak, is well-burnt cinders; we are indebted to Mr. Sims, the nurseryman, of Foot's Cray, Kent, for that most useful hint. He is very successful with cinders in the general cultivation of his pot Ferns. He says, in his Fern catalogues, that "all filmy Ferns require peculiar culture. Soil, very fibry and spongy peat, with plenty of freestone, or well-burnt cinders (not less than one-inch pieces) intermixed,—two to three inches would be ample depth; the rest of the pot, or pan, to be filled with drainage." Raise the soil considerably above the rim, and secure the plants on it, not in it. Keep always moist, but not stagnant; cover with a bell or other glass, and *screen from sunshine*. These filmy Ferns require more atmospheric moisture than other Ferns generally do; they should, therefore, be grown in a case by themselves, as few other kinds succeed well under the close treatment necessary for these.]

GOURD OR PUMPKIN CULTURE.

"Having some plants of a large sort of Gourd, I should be glad to know how to cultivate them, in order to produce fruit of the largest size. Instructions as to the treatment of these, from the time they are first planted, in order to produce large fruit, will greatly oblige."—PUMPKIN.

[You have left out the part of the country in which you live,—a matter of importance, as the Pumpkins will do as well in rich soil in the south, sown in April, as they will do with hotbed treatment in the north. Our answer, therefore, will apply to medium circumstances, and to the fact that the whole Cucumber tribe is rather impatient of a check. Even to obtain large size, therefore, I would not recommend sowing too early,—say about the middle of April, either under a handlight, or in a slight hotbed, or, if these are not attainable, in a pot by the side of the fire, towards the end of April, and the plants hardened off in a window before placing them out of doors. As already stated, under favourable circumstances, they need nothing more than to be planted in rich soil towards the end of May, and to be protected and shaded for a short time with an evergreen bough. But, in general circumstances, to give them every advantage, a trench should be cut out in a sunny spot, three feet wide, and two feet deep, and the place filled with hot, well-worked dung, placing the earth (and enriching it, also, with rotten manure) over it in a ridge. When finished, place a handlight over each of these places, and, as soon as the heat rises, turn the plants out, two in each place, if you have plenty,—one to be trained to the one side, and one to the other,—and the glass, as soon as the plants require it, to stand on four bricks at the corners, so that the runners may have a free outlet. If you had merely been growing for young fruit to be used in a green state, one plant in a place would do better than more, as by stopping and training it would soon cover a large space, and bear abundantly with a little thinning and stopping now and then. When your object is not only ripe fruit, but fruit of the largest size, some 150 lbs. or 200 lbs. in weight, then the treatment must be different. So long as the fruit is small and young, you may have numbers swelling and growing, though of different ages; but this is not the case as the fruit swells fast, and approaches maturity. Then younger fruits that show have no chance. Every Melon grower knows, that if his kind is at all large, and he has only one fruit set and swelling fast on a plant, it is uphill work to get another fruit to set and swell. This is also the case with these large Gourds. Only get one or two fruit to swell freely, and you will get no more to come to any size on that plant. Hence the importance of giving a fair chance of equal growth to as many fruits as you wish from a plant, by starting them on equal terms as to size in growth. In a large plant, this is not so easy in practice, as to write about on paper; therefore, I would counsel using more plants, and, in the case of extraordinary size, to take only one or two fruit from each plant. The plant being stopped at first, only two runners should be

allowed to grow, and the laterals from these stopped as soon as they show fruit. When two fruits, one on a lateral from each main runner, have set, and commenced swelling, cut away all others that show, so as to have these two fruits on the plant. You may stop several joints [beyond the fruit, and other laterals should be allowed to grow a joint or two, if there is room for them. Mere young growths, as autumn comes on, should be discouraged, as they take more from the main strength of the plant than what they return. After September, therefore, or the end of August, all laterals should be pinched back. The more space that is occupied with shoots, having their large foliage fully exposed to the sun, the greater demand will be made upon the roots. And if that demand is plentifully supplied with manure water, and mere young growth after the middle of August is discouraged, the chief force of the plant will be thrown into the swelling of the fruit into a large size. If our correspondent wishes to have fruit that will astonish his neighbours, and require a barrow to move them, we recommend leaving only one fruit to a plant. If he would prefer having a similar, or a little more weight distributed in four or half a dozen, he must watch the plant, and allow none to swell until he starts the desired number on something like equal terms. We recollect once having a very strong, vigorous Melon plant; and, though it showed fruit abundantly, we could not get the young fruit to begin to swell; but they turned yellowish, and refused to go on. On close examination, in a secluded corner we found on the plant one very fine Melon, swelling freely, concealed from view by foliage. If that Melon had been removed, there would have been no difficulty in setting and swelling half a dozen on the plant. The same rule holds in large Pumpkins. In dry weather they will greedily drink manure water.—R. FISH.]

POMOLOGICAL SOCIETY'S MEETING.

AN ordinary Meeting of the BRITISH POMOLOGICAL SOCIETY was held at St. James's Hall, 69—71, Regent Street, on Thursday, the 19th inst., H. G. BOHN, Esq., in the chair.

The following gentlemen were elected ordinary members:—

J. R. SCOTT, Esq., Crouch End, Hornsey
 HENRY DAY, Esq., Hemel Hempstead, Herts
 WILLIAM FIELD, Esq., 4, Paper Buildings, Temple
 B. COULSON ROBINSON, Esq., 43, Mecklenburg Square
 ALFRED DALBY, Esq., 43, Mecklenburg Square, and 8, King's Bench Walk
 W. GREEN, Esq., Mortwals, Takeley, Essex
 WILLIAM DONALD, Esq., 69, Regent Street, and West Lodge, Acton
 JAMES FRASER, Esq., 25, Westland Row, Dublin
 Mr. WILLIAM PAUL, Cheshunt
 Mr. FRANCIS DANCER, Little Sutton, Chiswick
 Mr. GEORGE GORDON
 Mr. D. FERGUSON, Stowe, Bucks
 Mr. JAMES H. SMITH, Hunmanby Hall, Yorkshire
 Mr. JOHN POTTLE, The Grove, Little Bealings, Woodbridge

The Committee, — consisting of Messrs. BOHN, MOORE, and BUSBY,—appointed at last Meeting to seek for, and, if found, to secure, more eligible apartments for the Society's Meeting, reported that they had engaged the room in which they were now assembled, at the same rate of rent as had been paid at St. Martin's Hall. They believed that its more western and more central position, and its contiguity to the chief omnibus routes, would render it more convenient to the present members, and calculated to place the existence of the Society more prominently before public notice.

The approval and entire satisfaction of the members present, the Meeting being a full one, was unanimously expressed.

A subject was again brought forward, which had

been partly discussed at the previous Meeting, namely, to consider the means best calculated to collect, from different localities and soils, accurate information, as to how far certain fruits were affected by such circumstances; where their quality was *very good, medium, or indifferent*: to the end that the Society might be able to decide, for general information, what kinds of fruits were best adapted for cultivation under each variety of circumstance.

Messrs. SCRUTTON, BUSBY, MOORE, and J. MILNE, were appointed as a Committee, to meet at half-past one o'clock, on the 9th of September, to consider the subject, and prepare, for the Meeting on that day, recommendations as to the best mode of proceeding, with a view to accomplish those objects.

The Secretary was instructed to have prepared, according to a specimen he laid before the Meeting, large placards, briefly explaining the objects of the Society, their days of meeting, &c., and to distribute them amongst the principal nurserymen, seedsmen, and other members who have public places of business, requesting that they may be fixed conspicuously about their premises, so that they may aid in bringing the Society more prominently under public notice.

The Secretary was also instructed to forward copies of the Transactions and Reports regularly to certain scientific societies, whose objects embrace the advancement of those branches of social science and art which have reference to botany and the cultivation of the earth.

FRUIT.

A very good display was laid before the Meeting, amongst which the following were the most interesting:—

GRAPES.

Mr. MELVILLE, of Dalmeney Park Gardens, near Edinburgh, gardener to the Earl of Roseberry, sent a SEEDLING MUSCAT, accompanied by the following particulars:—“It was raised from *Canon Hall Muscat*, impregnated by the *White Nice*, the object being to raise a variety which would set more freely, and possess a hardier constitution.” The Vine was said to be a very free setter, great bearer, and of very strong habit. These assertions appeared to be fully borne out by a fore-shortened lateral enclosed with the bunch, and containing on itself, and its sub-laterals, three strong bunches, two of which were enough advanced to show the free-setting properties of the variety at this season of the year. The young wood and leaves were very strong, hairy, and deeply veined with purple, something like the *Barbarossa*. The leaves were deeply cleft, coarsely, and very acutely serrated. The bunch, said to be the first cut from the plant, was small, and not quite ripe, but appeared to have set freely; berry about the size and shape of *Muscat of Alexandria*; skin thick; flesh melting, as that of *Sweetwater*, sweet, and decidedly *Muscat*, but not richly so in the state of ripeness in which it was exhibited. It was impossible for the Society to speak decisively regarding it, and a desire was expressed that it should be laid before them again, when more fully developed.

Messrs. J. and C. LEE sent bunches of the following four imported varieties which had been grown in a house along with young Vines, and constantly syringed, which was mentioned, to account for their loss of bloom:—

CHASSELAS ROSE DE FALLOUX.—A Grape of the *Chasselas* section, but not nearly so high flavoured as *C. musqué*; the bunches exhibited, however, displayed no tendency to split, although grown in a constantly syringed house. The bunch was long, compact, and appeared to have set well; colour pale yellow, approaching to amber; form of berry oblate, irregular, those

terminating each branch of bunch being the largest; skin tough; flesh firm, juicy, moderately sweet and musky, separating easily from the seeds, which are few, but large. It was not considered likely, from this examination, to be a valuable addition to varieties in cultivation.

ULLIADE.—A Grape apparently of the *Hamburgh* section. Bunch moderate size, and compact; colour black; berry slightly oval; skin thin; flesh tender, very juicy; flavour very sweet, more so than *Black Hamburgh*, but less vinous and luscious. Altogether it was considered a variety which the Meeting would be glad to see again.

CALLIABA.—A Grape of the *St. Peter's* section. Bunch long, black; berry rather small, round; skin about equal in thickness to *Black St. Peter's*; flesh tender, juicy; flavour very sweet, but slightly astringent. If it hangs well it may be a useful variety of this section.

Another variety, sent without a name, was believed to be DUTCH HAMBURGH, though smaller in berry, and more highly coloured than that variety is usually seen, which often results from pot cultivation. They were very good flavoured.

MELON.

Mr. POTTLE, of Little Bealings, Suffolk, sent a SEEDLING GREEN-FLESHED Melon; fruit oval, handsome, about four pounds weight; colour, outside, warm orange, very beautifully and closely netted; rind thick; flesh rather coarse. But the fruit was too unripe to enable the Meeting to pronounce upon its flavour, which was juicy, and not unpromising. The beauty of the fruit alone would render it an ornament to a dessert.

PEACHES.

Mr. WIGHTON, of Cossey Hall, Norfolk, with other varieties, sent specimens of ROYAL KINGSTON, supposed to be a misnomer for *Royal Kensington*, which is a synonyme of *Grosse Mignonne*. The fruit, however, was not of that variety, and could not be recognised, being over-ripe, and sent without leaves.

EARLY PURPLE. This was the variety known as *Williams' Early Purple*.

Mr. FERGUSON, of Stowe, Buckingham, brought a quantity of very fine ROYAL GEORGE, which he described as gathered from very old trees, in an old span-roofed house.

NECTARINES.

Mr. FERGUSON brought VIOLETTE HATIVE. Very good and fine.

Mr. LANE, of Berkhamstead, brought specimens of *Balgone*, a very good early variety, but one that is not so much grown as it perhaps deserves, because in some situations it is a shy bearer. Mr. Lane finds it bear well in his nursery.

APRICOTS.

Mr. EDMONDS, of Chiswick, brought a water-colour drawing, and read a very interesting account of a remarkable tree of that well-known and hardy variety, the BREDA, growing in the grounds of Joseph Coleman, Esq., Bohemia House, Turnham Green. The trunk measures four feet eight inches in circumference, and the tree covers an extent of ground thirty-nine feet diameter in one direction, and forty-six in the other. It is literally loaded and breaking down with its thousands of fruit, and has been considered the most remarkable horticultural wonder of the year by all who have seen it.

Mr. EPPS, of Maidstone, sent fruit of a SEEDLING, said to be grown on a standard in an orchard; an abundant bearer, and now in the third year of fruiting. The fruit was about the size of the *Roman*, much compressed; colour rich orange; flesh also rich

orange, soft; flavour very little. It was considered that the variety would be of no value for dessert, but useful for preserving purposes, on account of its fine colour and large size, if it were found to be hardy, and a free bloomer.

(To be continued.)

TO CORRESPONDENTS.

PHLOXES (*Ignoramus*).—The difference between *Phlox decussata* and *Phlox suffruticosa* is such, that no man on earth, or woman either, can ever make out or tell it to another; and the reason is obvious. A *decussata* Phlox is only one of those myth ideas which float in the air, which those in the florist world alone can breathe. As early as 1834, there were eighty kinds of seedling Phloxes in the Birmingham Botanic Garden, but no *decussata* Phlox. Herbaceous Calceolarias have been handed down since 1831, notwithstanding the constant tendency which they evince to assume the habit and constitution of the shrubby Calceolarias whenever the pollen mixes. The same kind of industry endeavours, only without succeeding, to keep the breed of the tall Phloxes, which have descended from *Phlox paniculata*, both pink and white, and the then dwarf *Phlox suffruticosa*,—both kinds having the corymbs, or flower-heads, in panicles, from the breed with the flower-heads in the form of a pyramid, which are still the tallest. The divisions would be intelligible if the right name had been given to the tallest, the latest, and the hardiest section, which is from *paniculata*,—a word derived from the shape of the flower-heads. While *decussata*, the wrong word, refers to the disposition of the leaves on the stem. The dwarf kinds, which flower earliest, are all from *suffruticosa* blood, and they are more delicate and more tender than the breed of *pyramidalis* and *paniculata*, which is erroneously called *decussata*. Countess of Holme, Countess of Morton, Addisonii, Abdul Medjid Khan, are all of the *suffruticosa* breed. The “best” of all the fancy flowers are those only which one likes best; but the following are very good kinds of *suffruticosa*:—1, *Virgo*; 2, *Amabilis*; 3, *Georgina*; 4, *Madame Celeste*; 5, *Madame Laurent*; 6, *Rose Brilliant*; 7, *Annie Salter*; 8, *Galatea*; 9, *May Queen*; 10, *Amatissima*; and 11, *Madame Fontaine*. The following twelve are from the newest and best kinds of the so-called *decussata* breed. They were raised by the celebrated foreign florists, Messrs. Lierval and Fontaine:—1, *Augustine Lierval*; 2, *Julie Roussel*; 3, *L'Enfant Prodigue*; 4, *La Volupte*; 5, *Louis Guerard*; 6, *Princess Alice* (Henderson); 7, *Souvenir d'un Ami*; 8, *Rigolo*; 9, *Louis Germain*; 10, *Le Gamin de Paris*; 11, *Monsieur Forest*; 12, *Madame Sueur*.

EPIDENDRUM (*S. J., Wine House*).—Your Epidendrum is *pluetum*, or very near it; but the flower was so dried that we cannot be certain without the leaf, for there is no end to that class of Orchids in the West Indies and on the Spanish Main, none of which are worth growing now-a-days.

VERBENA SEEDLING (*W. W. H., Lanarkshire, N. B.*).—The Verbena blooms were quite dried up, but the kind, being so dwarf, is sure to answer Mr. Beaton's purpose.

PRESERVING APRICOTS WHOLE.—One wishing to obtain Knowledge is desirous of a receipt for preserving Apricots whole. Can any of our readers oblige us with one that can be depended upon?

PIT FOR WINTERING YOUNG VERBENAS AND CALCEOLARIAS (*A Constant Subscriber*).—We are much surprised that your south-east aspect pits do not answer your purpose. We fear that aspect is not the cause of failure. However, as you are to build new pits, we certainly would prefer south, or south-west, to south-east, though, like the bewildered swain with rival lady-loves, we would be but too glad to have plenty of either. The advantage of the south, is having all the sun possible, and, if that should excite the plants too much in cold, frosty, bright weather, it would be easy to give a slight shade in such circumstances. We have had little difficulty in keeping Calceolarias in a north aspect.

MAGGOTS IN TURNIPS (*A Constant Subscriber, Plymouth*).—Unless we saw these, we could not tell the species of insect of which they are the larvæ. Growing a succession of the Brassica genus on the same ground is bad practice, as the grubs which feed upon one species of Brassica will usually feed upon another species. Thus the maggots, or grubs, on your Turnips may be descended from others which feed upon the Broccoli previously grown on the same plot.

FEEDING BEES.—“I have a stock of bees (a second swarm of this year) in a common cottage hive. I got a man who is accustomed to bees to lift them, and he said they weighed about ten or eleven pounds, including the hive. What food would be best to give? at what time? and in what quantity? Would brown sugar be wholesome to give the bees in any quantity? I know a cottager who fed a stock during the winter, by simply putting a little shallow plate of sugar into the hive; and a lady of my acquaintance feeds her bees with barleysugar, which she purchases for that purpose, at 1d. per ounce. I thought of buying honey, but it occurred to me to ask your valuable advice, as I have no bee-feeder, and as there is no aperture at the top of my hive. I should also like to know how to feed them?”—A HAMPSHIRE INQUIRER.

[A second swarm, of this season, weighing, hive included, only ten or eleven pounds, has little chance of turning to any good account. At any rate, it will cost you as much as it is worth, to feed it up till the spring. The best food is, undoubtedly, honey, at this season, and to the end of September; given freely, to enable the bees to store it in the combs. In spring sugared mixtures may do, or, what is better, barleysugar. Your hive is ill adapted for feeding, and you must manage as best you can; but the food should be placed where robbers cannot get at it, or a fight may be anticipated. You will find every direction for making and administering various kinds of artificial bee food, including barleysugar, in Taylor's “Bee-Keeper's Manual,” with other information of which you are in need.]

NAMES OF PLANTS (*E. C.*).—The white specimen is *Antennaria margaritacea*, the Pearly Everlasting Flower. The reddish grass, *Humea elegans*, and the other grass, rather carelessly sent with the other two specimens, is, we believe, *Festuca heterophylla*. (*J. M. D.*). 1. *Pelargonium odoratissimum*. 2. *Pelargonium quercifolium*. 3. A variety of the above, commonly called *Unique*. 4. *Catalpa syringifolia*. Your specimens were nicely sent. (*The Lady Alice*).—Your Ferns are as follows:—7. *Polypodium dryopteris*. 8. *Cystopteris fragilis*. 9. A young or seedling form of *Cystopteris*. 10. A peculiar form of the *Asplenium trichomanes*. 11. *Asplenium trichomanes* in its natural form. 12. *Polystichum aculeatum*. 13. *Lastrea dilatata*, a small frond. 14 is the *Athyrium filix-femina*, a small frond of it. 15. *Polystichum lobatum*. (*J. K. C., Stewarton*).—Your plant is the *Datura stramonium*, or common Thorn Apple—*Stramonium* of the shops. This plant is frequently found in and about old gardens, and in waste grounds, among rubbish-heaps, dunghills, &c. A doubtful or a rare native.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 28th. HALIFAX AND CALDER VALE. *Sec.*, Mr. Wm. Irvine, Holmfield, Halifax. Entries close August 14.

SEPTEMBER 8th. LIVERPOOL AND MANCHESTER.

SEPTEMBER 14th and 15th. SPARKENHOE (at Tamworth).

SEPTEMBER 21st and 22nd. BRIDGNORTH. *Sec.*, Mr. Richard Taylor, Bridgnorth. Entries close the 15th of September.

SEPTEMBER 21st and 22nd. LICHFIELD.

SEPTEMBER 26th. PAISLEY. Entries close Sept. 18. *Sec.*, Mr. Wm. Houston, 14, Barr Street.

OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

OCTOBER 13th and 14th. CREWE. *Sec.*, D. Margetts, Crewe. Entries close 30th September.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. *Sees.* R. Teebay, and H. Oakey.

N.B.—Secretaries will oblige us by sending early copies of their lists.

GROUSE AND QUAILS IN CONFINEMENT.

WE are asked, “Will Grouse live in confinement? What would be the best food for them? Will Quails live in confinement? With what should I feed them? Will they stand the cold of winter?”

Most people are aware of a certain indefinable feeling of familiarity with some event that has just occurred, and which certainly never happened before. The most unexpected and most unlikely thing seems as familiar as the events of our every-day life. We have heard it attributed to magnetism; some find therein the fact, that “coming events cast their shadows before them;” and others believe in the theory of Captain Marryat's ship's carpenter, that everything that happens, happened 1262 years ago, and will occur again in 1262 years. We must leave wiser men than ourselves to decide as to the best of the three theories. It is possible some of our readers may be of the Burchell class matter-of-fact men,—stiff old fogies, who cry “Fudge” to everything that does not admit of plain proof. We are not sure that “My lady fainted and turned all manner of colours; or that Sir Tomkin drew his sword, and declared he was her's to the last drop of his blood;” but this we can affirm, that, just before the arrival of the above queries, we were asking ourselves whether a paper, now and then, on the habits of such birds would not be acceptable to our readers.

Grouse live very easily in confinement, and are bold, tame, cheerful birds. They seem to be exempt from most of the ailments to which many others are subject. Like the Pheasant, they become reconciled to captivity, and feed almost as soon as they are caught. Their food is bread, oats, wheat, and heath. The latter is, however, not essential always, and they will do without it for a long time. It is very beneficial to them when it puts out its first shoot. It may be easily got at any time; but, as it is not always so accessible in the shape of a huge turf with the heath in a

growing state, and as they pull it off, instead of cutting it, with their beak, we will give our experience, and may remark, that we have had hundreds of these birds, sometimes from twenty to thirty at once. They were confined in cages. As we found, that when small pieces of heather were thrown in they did not care to eat them, and as it was not convenient to get up large sods, such as we have described, we had it cut long, and then wove the scrag, or stalk, of it in the wires of the cage, leaving the shoot, or flower, inside. They always ate it all. No bird is so dainty in its water, and none suffer so speedily if it is withheld. There is, however, one thing essential,—they must have sand, and that which they prefer is the white sand, washed up at the sides of a stream or rivulet. They are very fond of a large sod of grass, and greedily eat all the clover to be found in it. Fed and cared for in this way, a pair may be kept in a very small aviary. They speedily become attached to their owner; and, although it is years since we had any, we still recollect with pleasure the hearty gallant crow of the cock, when, with spread tail and crimson eyebrows, he answered our morning challenge.

It may not be uninteresting to mention here, that, for many months, we kept a pair in a cage two feet square. They were tame-bred, and the hen laid eight eggs; they were entrusted to a Bantam hen, and she was faithful to her trust.

We have always thought, and do still, that both Grouse and Black Game may be bred tame in aviaries, as Pheasants are. We once had four poults brought to us; they were about a week old, and their mother had been killed. We placed them in the first cage we had at hand, which was one lately vacated by a Blackbird. We fed them with sopped bread, wheat, and chopped eggs. They thrived well, till at last we discovered if we did not remove them, they would be in the position of the Vicar of Wakefield's family picture, and we then put them in a cage two feet square. Here they lived well for some time, till there seemed to come over them one of those fits of longing, which, in children, are said to be cured with a sucking-pig's tail, or a hare's brains, and in Pheasants, with ants' eggs. We were at our wits' ends. They could not tell us what they wanted; but it was evident, unless they had it, their apartments would soon be to let. Now, we are Hampshire people, and, although in London at the time, yet clinging to the traditions of home;—we loved whorts, or, as they are pronounced, hurts, and bought them whenever they were to be had. Passing the cage, and seeing our drooping birds, we threw in some whorts, with a feeling akin to that recorded of the ancient painter, who, despairing to paint the bloody foam on the bit of the charger's bridle, threw his brush at it in disgust, and accidentally accomplished that which all his skill had failed to portray. We had a like success,—the poults picked up the whorts. In two hours they were well, and we never had any difficulty with them afterwards. We gave them whorts so long as they were to be had; they then took kindly to bread, oats, wheat, a little hempseed, and heather. We moulted them off,—good, large, well-grown, handsome birds, and they eventually went abroad. We need hardly say, we have written of these birds with pleasure. We like them much, and they are calculated to be pets with any one. It is more difficult to say where they are to be had. They were formerly frequently brought for sale to London, but the demand for them was so uncertain, and the return, consequently, so precarious, that there have been none sent of late. The Grouse used to come from Scotland, and the Black Game from Norway and Holland. If the eggs can be procured fresh, and put under a Bantam, there would be no doubt about rearing them.

Quails are different birds; they are easily kept, and they are very hardy. They are not, however, so pleasing as the Grouse tribes. They lose all fear of man, but they do not become attached to him. They get accustomed to confinement, but they do not seem to enjoy themselves. Grouse seem to make the best of a bad job, and to submit cheerfully to incarceration; but Quails are sulky.

Quails may be kept in any sort of cage; but, like most other British birds, they do better on the ground than on boards. Their food is hempseed, canary-seed, and wheat. They require to have water constantly by them. We have no migration of Quails to this country. They come to France every year, for the breeding season. There are none in that country after the homeward flight in September; yet, by a

strange contradiction, we have them in Cambridgeshire, parts of Hampshire, and in Ireland always. They breed there, and are to be found all through the winter. They are killed in numbers in Ireland, and are sufficiently numerous in Cambridgeshire to enable those who catch them to send them in lots, varying from two to three dozen at a time. Speaking from recollection, we believe they have only once been known to breed in confinement, and it was then in Lady Rowley's aviary, in Suffolk. In purchasing, it is necessary to be very careful that a pair is bought, as nearly all the birds from abroad are males. The difference in the plumage of the sexes is, that the breast of the hen is accurately dotted with black spots; the cock has none of them. They are of small value at this time of year, and may be bought at Baily's, in Mount Street, for a few shillings the pair.

CHEAP PENS FOR POULTRY SHOWS.

ALL persons conversant with the working of a Poultry Show know, too often from dear bought experience, that the purchase or hire of pens forms one of the most formidable items in the expense. In almost all cases, provided exhibitors have confidence in the integrity of the Committees and Judges, the entry-fees may be regarded as paying the prizes, leaving the money taken at the doors to pay the cost of rooms, feeding, attendance, and pens. Such being the case, every one interested in Shows must hail the issue of a cheap set of pens as a great boon. I have, therefore, no hesitation in calling the attention of Committees to the exceedingly efficient, convenient, and cheap pens issued by Turner, of Sheffield. They are formed in front, top, and back, of square pieces of galvanised wire, the front piece having a convenient-sized door, which is hinged at the upper part, so as to fall down when a bird is taken out of the pen. The sides are solid, and prevent the birds seeing each other from adjoining pens. The whole fold together, so as to occupy, when out of use, the smallest possible space. The pens were first seen by me at the last Sheffield Show, where I acted as one of the Judges, and I can truly state that I never met with any that gave greater facility for the examination of the birds. The water-vessels are readily suspended on one of the horizontal wires, and cannot be upset; and perches, if required, are quickly laid across from front to back. The cost at which these pens are to be hired is ridiculously low,—those for pigeons being 6d. per pen, and those for fowls being 8d., and 10d. extra size.

I have obtained some from the maker, and find that for mating pigeons, or as coops, they are exceedingly convenient; and as they fold up, and hang on a nail when out of use, they are much less likely to be injured than those that are always extended.

While speaking of the Sheffield Show, I may direct attention to the substance used for covering the bottoms of the pens. It was simply cut chaff. A number of chaff-cutters were shown in action, and, consequently, there was a good supply. Its advantages were, that it was perfectly clean, did not soil the fowls, furnished them with a constant source of occupation in scratching, and prevented the dirt soiling the plumage. In places where there is any difficulty in getting any other suitable material to throw into the pens, I think recourse may advantageously be had to straw chaff.—W. B. TEGETMEIER.

CRYSTAL PALACE POULTRY SHOW.

(From another Reporter.)

THERE cannot be a second opinion, that the summer Show of chickens, just concluded, was decidedly the best that has ever taken place in the United Kingdom. To most of our poultry amateurs, it is well known that the spring of the present season was anything but favourable to the production of early chickens; so much so, that grave doubts were entertained by some individuals as to the success of our summer chicken Shows. Nevertheless, the competition at the Crystal Palace was excessive, and proves how much may be done in poultry culture by experience and attention.

The chickens there exhibited at once carry conviction that the office of a poultry Judge, at future Meetings, will be the

reverse of a sinecure. Let any one, for example, walk carefully along the class for *Spanish* chickens, or for single cockerels of this highly and justly-valued variety, and the difficulty would be to find any single entry that was not a good one. Indeed, our conviction is very strong, that triumphs in these classes will be more difficult of attainment in a year or so than they have ever yet been. A ready reason may be assigned,—most breeders are now cognizant of the needful requirements of prize-taking, and, by practical experience in mating the parent birds, breed almost the whole of their chickens with the coveted characteristics.

In coloured *Dorkings*, not a few of the exhibitors had forced nature too far, and by increasing the weight of their favourites, *without proper exercise and freedom*, had produced malformation of the legs, and, in some instances, inability of locomotion. As this mistake is fast extending itself, we particularly guard our friends from adopting such ill-advised expedients, that can never promote any feelings but those arising from discomfiture, pecuniary loss, and self-wrought disappointment.

The improvement in size and character of the White *Dorkings* also, was one of the most striking features of the Exhibition, and worthily elicited from the Judges, Messrs. Baily and Hewitt, an unusually high commendation.

The *Game* classes were marvels of superior breeding. But we cannot refrain from again impressing on the minds of our readers, the reckless folly of placing these proverbially pugnacious birds together for the *first* time in a hamper, and then sending them away immediately for exhibition. Two pens were received by the never-tiring secretary, Mr. Houghton, in so fearfully hideous a condition, from the master-birds having actually eaten away portions of flesh as large as crown pieces, that they were very properly at once removed from public gaze, and would most certainly be entirely valueless, if living, when they reached home.

The competition in the *Polands* and *Hamburgs* was limited; still many most praiseworthy chickens were exhibited.

The *Aylesbury Ducks* were scarcely so heavy as we anticipated, and some few of the *Rouens* were faulty in feather.

The *Geese* were very superior, but, contrary to custom, the *Greys* had the advantage in the scale.

The *Turkey* Poults were very excellent, and, by reference to the prize list, it will be seen that the premiums were secured by that celebrated breeder, Mr. Brand, of Cambridge.

The *Labrador Ducks* were peculiarly praiseworthy specimens, there being an almost faultless collection of these attractive birds.

The *Sebright Bantams* were not meritorious, the severities of last spring killing most of the early hatched ones. The *Black Bantams*, however, made ample amends for this shortcoming. There was never a better collection, public attention being evidently enlisted to breed them. The *Game Bantams* were superior. A great rivalry seems now to exist among the breeders of this truly beautiful variety of fancy birds; neither does any class show greater improvement than this.

Although it is hopeless for poultry committees to aspire to a Crystal Palace for their local Meetings, still we cannot allow the present opportunity to pass by, without suggesting that there are but few (who anxiously desire to carry out a Show efficiently) who might not gain much valuable additional information, by inspecting the arrangements of the present Show. Nothing is left to be desired, every possible credit is due to Mr. Houghton, and each returning Exhibition adds materially to the popularity of these Meetings.

POULTRY FOR PROFIT.

POULTRY-KEEPING having been for some years an object of interest and attention to a numerous class, we may now reasonably ask for the results.

As regards the birds merely bred for feather, we are not concerned, beyond the degree to which they may severally share the claim of being profitable as well as handsome. Some classes, however, it will be found, are fortunate enough to possess both these recommendations,—beauty of form and plumage being added to acknowledged merit as poultry. Hence becomes manifest the truth of what was long ago asserted in the pages

of THE COTTAGE GARDENER, viz., that the merely fancy bird would never maintain the high position to which accident might have raised it, if it should prove deficient in the properties that are requisite for economical purposes.

An illustration is ready at hand,—Would the Spanish fowls have ever kept their high place in public estimation, as evidenced by the prices they still command, if they had not been so meritorious as layers? Again, size equal and even superior to that of the *Dorking* might readily be attained, but not combined with the peculiar merit of those fowls for the table.

Let the different breeds be now passed briefly in review, that it may be seen in what degree they have severally realised the expectations of their respective advocates.

Beginning with the *Cochin China* (for usage has confirmed this appellation, though it may well be doubted if a single specimen ever came from the district bearing that name), have they justified what was said in their favour on their first introduction? It is not affirmed, let it be borne in mind, that all that was urged in their recommendation, by an excessive and indiscriminating estimate of their properties, has been attained. The "Poultry mania," indeed, in this case carried to an extravagant point, told severely against them, so soon as its first ardour cooled; but have we got any better winter layers, and is not this a feature that will always be appreciated? For the table, indeed, they occupy a comparatively low position; yet even here a wide difference may be observed in the different strains, and little difficulty will now be found in a selection of stock of compact form, which, though inferior to the *Dorking*, and some other breeds, are yet by no means to be wholly rejected. The same judgment should be exercised with a view to their properties as layers, since many strains are far more frequently interrupted in their production of eggs, by a tendency to sitting, than is found to be the case with others.

Dorkings require little to be said on their behalf, their merits being even generally admitted; the result of Poultry Exhibitions, as was justly anticipated, having led to an extraordinary increase of size, and, what is no less important, to their very early maturing.

Spanish, in regard to the large number of eggs laid throughout the year, have fully maintained their position, while their remarkable beauty of appearance is held by many to compensate for their drawbacks in reference to the kitchen.

Malays are, probably, as limited in their numbers as when public attention was first bestowed on poultry matters. More, therefore, need not be said of them.

Polish, though admitted to a place in the catalogue of the Royal Agricultural Society as "farm poultry," have slight claims to be so considered. They are, as the COTTAGE GARDENER ever urged, strictly fancy poultry, as such indeed very beautiful, but there their recommendations cease.

Game fowls are not exceeded by any in respect to their excellence for the table; but their habits and disposition unfit them for being kept in the large numbers that are usually required with that view.

Hamburgs seem to answer far better in some districts than in others; for from some quarters we have accounts of their prolific character as layers, which can not be obtained elsewhere. They are small, and but slow in growth, points decidedly against them in the kitchen.

The *Rouen* and *Aylesbury Ducks* are clearly at the head of their race, the former being frequently thought to stand first, though this may still fairly be left as an open question.

Geese depend more upon their management, than the selection of a particular breed. Where great size is wanted, the large white birds would probably answer best; but a cross with the *Toulouse* has many advantages where smaller birds are sufficient.

Poultry are here spoken of simply as to their economical properties for the table; and, where this object only is sought for, a combination of *Dorkings* and *Spanish* has been frequently adopted. It must not be thought, however, that by this word "combination" any cross of different breeds is intended, since, of all the principles on which poultry-keeping has been managed, none has obtained more general acquiescence than that of keeping your breed, whatever it may be, distinct and pure.

But eggs and fowls must both be liberally provided. *Spanish*,

with a few Cochin Chinas for winter laying, will give the most abundant supplies of the former, while, for the latter, few persons will now be content to be without the Dorking. It is seldom convenient, and still more rarely profitable, to keep distinct breeds in one place. Let the cocks, then, and a majority of the hens, be Dorkings, and let their eggs alone be taken for hatching, the others for consumption. No mistake can arise, for the smallest amount of experience will at once detect the eggs of the different kinds. By such a system the wants of a house will probably be best supplied. Where, however, the breeds can be kept separate at different farms or lodges, this plan may not be requisite; still, as in large establishments it is usually desirable to have the poultry under one management, the arrangement spoken of appears most likely to answer the various requirements of the housekeeper.

At another time, a few words may be added as to what has been learnt by experience with respect to poultry houses and yards.—W.

CURIOUS FACT IN NATURAL HISTORY.

A SOMEWHAT singular circumstance connected with poultry breeding has just been witnessed by myself, that otherwise I could scarcely have credited. It appears that, early in April last, a hen Pheasant was found upon the farm of one of my tenants, sitting upon her eggs, closely adjoining a bye-lane, and, therefore, in a situation so exposed, that in all probability both parent and eggs would inevitably have fallen a prey to some passer-by. The eggs of the Pheasant were, therefore, carefully removed for incubation by a common hen. For no really assignable motive that I could ascertain, the boy who took the eggs, unknown to any other individual, placed in lieu of them seven Grouse Partridge Cochin's eggs, from fowls commonly kept in the yard for domestic purposes. The Pheasant sat on, as though no change whatever had been effected, and actually hatched six Cochins! The boy kept his secret rigidly to himself, and it was not till the chickens were some three or four weeks old, that the occupant of the farm was aware of their existence; and, to use his own words, "could not believe his eyesight the first time he saw them following their wild foster mother." They have progressed, since that time, equally well with the other chickens from the same Cochins reared in the poultry-yard. Indeed, as to *feather*, quite surpassed them, the plumage apparently being very close and fine; one chicken, however, from some supposed mishap, has been missing altogether within the last few weeks, leaving five remaining.

The hen Pheasant has quite deserted them, and they (now the corn is carried) have taken to the wood, and are evidently as wild as Pheasants themselves. They have not as yet shown any disposition to roost, but at nightfall, "jug" together in a group, as Partridges are accustomed to do.

I will now very briefly detail two peculiarities, evidently the result of the singular manner in which they have been reared. The moment they are discovered by anyone, when on feed, they at first squat closely; but, if the danger gets more imminent by nearer approach, they instantly run at a speed few would imagine, to the cover. They assist themselves by partially opening their wings, but never fly, except the last few yards towards the hedge surrounding the wood; this, being low, is always flown over, for, strangely enough, no exigency of circumstances will induce them to run through it, although hare-tracks are abundant. To try what they would do, some chickens reared from the same Cochins, and about the like size, were taken from the farm-yard and placed on a barley-stubble that the wild birds frequented; but they would not approach within a hundred yards of their domesticated brethren. Indeed, when the chickens from the house attempted to move in their direction, they all bolted away simultaneously. But I have yet to mention a still more extraordinary constitutional change, evidently the result of the manner in which they have been produced. I was told by the farmer "that 'Belle' (an exceedingly well-trained pointer bitch) *always* stood to them, but *never* took any notice whatever of those about the house." Imagining this might be accidental, or a statement somewhat exaggerated, or, again, perchance the result of the pointer suddenly coming upon

them in a strange locality, and far removed from the homestead, I determined to see and judge for myself. She was allowed to range, found them collectively (and afterwards as single birds), in first-rate style, and pointed steadily. Two similar chickens taken *fully an hour previously* from the yard, to the same piece of land, she passed closely without any apparent observation whatever. Mentioning this to a friend who is fond of the gun, he at once attributed the dog's "staunchness simply to her having been practised in finding them, or, as it were, being broke to them;" adding he was certain, "that neither his pointer nor setter would acknowledge them, and he dared wager his life it would prove so." Both these dogs were tested, and it is well to remark, the setter had been almost exclusively trained for the Moors, indeed was about leaving for Scotland in a few days.

He "winded" them, then cautiously "drew," and at once stood firmly on the foot-track, the pointer "backing" as a matter of course. His owner, in reply to my query, "Do you now remain sceptical?" said, "Stay a minute, Don will soon find out his error, nor will they again deceive him." Tired of waiting, the dogs were withdrawn, and again towards evening tried a second time; this time the birds were scattered, and each dog found in sporting style, and stood to perfection. It is only right to name also, that, prior to this *second* range, these dogs were purposely permitted to stand to both hares and Pheasants, and in doing so acted as well as dogs could do, whilst immediately afterwards they were imposed upon by these wildly bred Cochins. Although the detail may appear somewhat too prolix, I fancy that at least some of your readers will be quite as unprepared for such results as we ourselves were; my friend's dogs betraying not the slightest emotion to any of the fowls about the house, nor even noticing such poultry, when alarmed by their unaccustomed presence.—FAIRPLAY.

ADDITIONAL NOTES ON PIGEONS.


SINCE I wrote my notice of the SWALLOW-TAILED PIGEON, I have received a later edition of Dr. Bechstein's "Natural History of the Birds of Germany," in which I find the following account of that Pigeon:—

"The tame Pigeon with the swallow tail (*Columba domestica forficata*). This variety must be rarely found, as I have, during a period of between four-and-twenty and eight-and-twenty years, only seen these Pigeons twice in a collection of Pigeons in Naumburg and Jenna. In southern Germany, I understand, they are oftener met with than in the northern parts. They are the size of the common Dovehouse Pigeon, but longer, and slighter built. What is most remarkable about them is their forked tails, which exactly resembles that of the swallow; they are black and white spotted, rarely black, with and without turned crowns, with and without ceres, and in their manner very merry; but do not multiply very fast. The amateurs regard them as one of the handsomest varieties."—(*Natural History of the Birds of Germany*, 1807. By Johann Matthäus Bechstein, vol. ii., page 983.)

Note to my SKINNUMS, or common flying Pigeons.—By a recent visit to London, I find that gentlemen are working the common Skinnum into a breed, called Long-faced or Skinnum Beards; these they are breeding to a standard, from the eye to the end of the beak; *i.e.*, the face must measure one inch and five-eighths, and the plumage that of the Beards,—blue, black, or silver; with tail, flights, and beard white.

In my description of the ALMOND TUMBLER, I find I have made an error respecting the number of flight or pinion feathers, which, according to the established rules of the Pigeon Societies, it is considered necessary should contain the three colours,—yellow, black, and white. Though all Pigeons, as a rule, have ten flight or pinion feathers in each wing (I had almost said all birds, so general is it), yet among the high-bred short-faced Tumblers exceptions do occur, and so frequently as to induce the gentlemen of the fancy to reduce the standard to nine flight feathers; the reason of which I could not understand till Mr. J. M. Eaton enlightened me, that it would be unjust to compel one fancier to show ten standard feathers against another that had but nine; so that, to admit the birds that have only nine flight feathers, the standard is reduced to nine in all.—B. P. BRENT.

WEEKLY CALENDAR.

Day of Mth	Day of Week.	AUG. 31—SEPT. 6, 1853.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R.and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
31	Tu	Bordonia cordata.	29.944—29.929	80—56	E.	.08	12 af 5	48 af 6	10 af 9		0 12	243
1	W	Abelia triflora.	29.676—29.822	76—48	W.	.14	14 5	46 6	59 9	23	0 7	244
2	Th	Adesmia viscosa.	29.615—29.519	64—44	W.	.28	15 5	44 6	8 11	24	0 25	245
3	F	Angophora eordifolia.	29.541—29.527	63—41	S.	.49	17 5	42 6	morn.	25	0 44	246
4	S	Anisomeles furcata.	29.629—29.505	66—44	S.W.	.01	19 5	40 6	31 0	26	1 4	247
5	SUN	14 SUNDAY AFTER TRINITY.	29.730—29.522	73—43	S.W.	—	20 5	37 6	3 2	27	1 23	248
6	M	Arctotis decumbens.	29.876—29.836	73—42	S.W.	.01	22 5	35 6	34 3	28	1 43	249

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 70.2° and 47.5°, respectively. The greatest heat, 85°, occurred on the 1st, in 1843; and the lowest cold, 30°, on the 4th, in 1850. During the period 125 days were fine, and on 92 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

As the genial showers of last week have greatly revived vegetation, now is the time to bring up all arrears in planting and earthing-up the various crops that require it. Now is the time to be up and doing, whilst the natural warmth of the soil and refreshing dews at night continue to contribute so much to the growth of the several principal crops, that planting may be finished in good time, before heavy rains descend to chill the ground.

BROCCOLI.—Plant late sorts for spring use. Earth-up the advancing crops.

CABBAGE.—Plant nine inches apart. Every alternate one to be drawn for Greens, the rest to stand through the winter for late spring use.

CARDOONS.—Earth-up, for blanching, when quite dry.

CELERY.—Continue to earth-up the early crops, when the leaves of the plants are perfectly dry. The other crops, not sufficiently advanced, to be earthed-up, and to be supplied with an abundance of water.

CUCUMBERS.—Such as are intended to be kept in bearing in the frame, should be supplied with heat from fresh linings, and covered with mats when the nights are cold.

ENDIVE.—Continue to blanch and plant out from successional sowings.

LETTUCE.—Sow in a very sheltered place. Plant out former sowings under walls, handlights, or frames.

PARSLEY.—Thin the summer sowing, to acquire strength to stand the winter. A portion of the spring sowing to be cut down, to make fresh growth.

TOMATOES.—Gather the fruit as it ripens, and expose the others to the ripening influence of the sun by removing any shoots, or leaves, that shade them.

TURNIPS.—Finally thin out the crops for winter use, and hoe the ground amongst them.

WATER CRESS.—Make fresh beds, and clean the old ones.

FRUIT GARDEN.

Wherever the fruit is stored, it should be kept always cool, dry, and airy; be handled as little and tenderly as possible; be laid, if convenient, in single tiers; neither straw nor hay used about them, as such materials are apt to spoil their flavour; to be frequently looked over, and decaying fruit removed as soon as noticed.

CHERRY TREES (on walls).—Thin the leaves of the early sorts, to ripen the wood. Protect *Morellos* with nets.

PEACHES and NECTARINES.—Remove decaying leaves, to expose and ripen the wood. Protect the late fruit from wasps.

PLUMS.—Protect the *Impératrice*, and other late-keeping varieties, with Haythorn's hexagon netting.

VINES.—Thin a few leaves, to assist in ripening the fruit and wood. Protect the fruit with gauze bags.

FLOWER GARDEN.

The general routine will be, to keep the plants in the beds within the proper bounds; to gather flower-seeds as they ripen; to cut off all decaying leaves and flowers; to remove annuals and the stems of herbaceous plants that have done blooming; and to prune, nail, and tie-up climbing plants.

BULBS.—If Dutch bulbs,—such as *Hyacinths*, *Narcissi*, *Jonquils*, *Tulips*, &c.,—are to be purchased, the sooner they are selected the better. To be potted, and plunged in some cool place in the open ground, with five or six inches of coal ashes, old tan, or any other such material, over them. To get the pots well filled with roots before the leaves are developed is generally the great secret of their ultimate success.

CARNATIONS and PICOTEES.—Carefully protect seed-pods when they are of fine quality, and have been cross fertilised.

HARDY ANNUALS.—Sow *Ten-week* and other *Stocks*, *Collinsia bicolor*, *Nemophila insignis*, *Erysimum Perofskianum*, either in pots or in the open ground.

MIGNONETTE (in pots).—To be kept in a pit, or frame, until winter, when they may be removed; as they will be best protected on the shelves of a greenhouse, near the glass.

PERENNIALS.—If an increase is required, all the earlier-blooming kinds may be taken up, and divided.

PINKS.—Remove such as have bloomed the second season, if there is a sufficient stock of young plants to replace them; if not, the straggling branches of some of the best old plants should be cut closely back, when they will make more compact and healthy plants for next year.

RHODODENDRONS.—Cut off the seed-pods, and water copiously, to secure a good bloom for the next season.

WILLIAM KEANE.

THE SIZE OF BEDS AND BEDDING PLANTS.

THERE are three ordinary sizes of flower-beds,—large size, middle or common size, and small size. There are also an extra large and an extra small size. The large-sized bed is from ten to twelve feet across, supposing it to be a circle. The ordinary, the middle size, is just six feet across, and no more. The small bed is from two to three feet across. All sizes, from three feet across to the six-feet bed, are smallish, but not small; and from six to ten feet, largish, but not large.

These terms and dimensions are constantly on the tongues of first-rate planters, and such planters put the greatest stress on having the sizes of the plants in height, bear a standard proportion to the sizes of the beds. But nature makes no leaps; and it is more natural for most people to mend their ways as they go, than to jump at conclusions on the path to nature's ways. Hitherto we have been more engaged in mending the shapes of flower-beds, and in disposing them

to the best advantage; and in arranging the colours in a more natural way than formerly, than paying much attention to the secrets of the art of planting to the best advantage.

The first grand secret in planting is, to have the height of the plants bear a certain proportion to the width across the bed. The want of suitable plants for the sizes of beds must have been the cause for training down plants, or, rather, part of the cause,—fashion taking about one-half of the responsibility of training down plants.

Now, when “our own correspondents” write to us, to ask about a thing, every one of them, young and old, male and female, will ask about the best of every mortal thing; and when we take the average best, and name it, we merely puzzle a large number of our most knowing readers, and, what is more likely than not, the very person who is specially answered may have the greatest puzzle of all, or the greatest disappointment. That part of our calling will not be much better understood, or more correctly managed, until we raise the nation as much higher above the present level as that level is in advance of the practice of planting which obtained twelve years back.

A prize coloured drawing of a flower garden of those days, by a friend of mine—one of our best flower gardeners—was shown to me lately in a book of standard merit, and I am quite sure that a reading cottager far down in the country would turn up his nose at that plan now, if he was asked to plant his beds that way. But it is only right to name, that my friend, the author of that plan, is much of the same opinion now as the said cottager it is supposed would be, and that he declared as much in the presence of a few “spirits of the age” not very long ago, as one of our Editors may remember. But every change in plan and purpose connected with flower gardening, the very youngest of the arts, does but smooth the way more thoroughly for the reception of higher aims, higher qualities, and long-wished-for excellences, which are plain enough to some minds at the first start, but which are, as yet, but dreams to a large class of respectable operative planters, and never yet heard of by the great bulk of the gardening world. One of these “aims” is the very cause of the bother among the bestmongers. But what may be best for one person is not the best for all, in many things about the garden. The best Verbenas for my beds are certainly not the best, or second best, kinds for the beds of some of my neighbours at Surbiton. We have the same soil, the same climate, aspect, and shelter, and yet we differ widely in the plants which are best fitted for our beds. If I knew as much about the beds of all my readers as I know about these, I should have no difficulty in deciding at once which was the best plant of this or that kind to suit them; but, as it is, I can only state the average run; no one can do otherwise under the circumstances.

The average run of beds is the six-feet across, and from that down to four feet across. Now, the best plant for a bed from four to six feet across might happen to be one of the most unsuitable plants in the country for a small bed,—say, one under three feet across,—and the same plant might only be fit for an edging plant to a bed which is ten or twelve feet across.

In grouping beds, some of them will be twice and three times larger than others, and, if a group of beds is not planned from a common centre, the outer beds in the group ought to be the largest, because the strongest colours are more telling on the outside. But, if there is a centre to the group, the centre bed may be as large, or larger, than the side ones; the main point is, not to plant such a centre bed with gaudy

colours, so as to draw the eye to that point. The centre bed may be the largest in the garden, and the most richly planted, but must not be the most showy or gaudy.

The difference between a gaudy and a rich bed is this,—*Tom Thumb*, or any scarlet Geranium, makes a rich bed, which is very showy or gaudy; and *Flower of the Day*, or any other variegated Geranium, makes a rich bed, but not a showy or gaudy one. Make the centre bed, therefore, as gay or rich as you choose, but never rich and gaudy; the outside of a group being gaudy with scarlet, white, and yellow, and with blue, if it is near the eye. The beds for these colours should be considerably larger than the rest of the beds between them and the centre bed.

If ever you see a plan for beds on the grouping system, and any bed in the group is larger than the outside beds, or as large as the centre bed, that plan is wrong, radically wrong, and no one can ever plant that group on the best telling system. Then it follows, that in a common garden, or in an ordinary group of beds in any garden, there will be three sizes of beds; and every size, from the very smallest to the largest bed, requires a certain size of plant to suit it best. Therefore, the Verbenas, Calceolarias, and Geraniums, at least ought, each of them, to furnish three sizes of best plants, and every section of bedding Geranium ought also to give a suitably-sized plant to each size of bed. I repeat, that great planters consider this the grand secret for a proper disposition of heights, as they say, which is altogether independent of placing the colours properly.

When every one who keeps a flower garden understands that secret, the next call upon the cross-breeders will be, to get the best-sized seedlings in every tint of colour which is used in the garden,—say, three sizes in every tint, large size, medium size, and small size. The Verbenas are the most numerous, but they do not yet furnish the requisite bests, because they have not yet been called for, which has caused some most useful seedlings of them, and of many others, to drop out of cultivation for want of demand.

The Crystal Palace, Kew, and Hampton Court, are the best public places, near London, to learn flower gardening, from seeing what is in use, and the way use is made of the different kinds of plants. The narrowest beds in all the three is only fifteen or eighteen inches wide, and there are three rows of plants in it,—that is, hardly six inches in width to one kind. Now, what is the best kind for this six-inch width? Or take the three feet border, all round the top of the Rose mount, which is planted with three rows of plants, giving a foot to each kind, as I stated last week,—which are the best plants for a three feet wide bed, allowing three rows to the bed, and one kind in each row?

We must not be guided altogether by what others do. I took an exception to the plants in that circle, or rather to one of them, the variegated Alyssum; but then it may have been an experiment, to see if the soft looks of the Alyssum would agree with the hard dry looks of the old scarlet variegated Geranium, and it so happens that it does not agree. Therefore, that may never be repeated there. The variegated Alyssum will, then, destroy the effects of all the variegated Geraniums alike. But the destruction is more complete when the two kinds are mixed, than when they are in separate rows, side by side, and less still when there is a large mass of variegated Geranium, edged with a trim line of the Alyssum. Would the thing do better if, instead of the two outside rows in that border being variegated Geranium, they were of the *Lobelia speciosa*? No, not in that particular situation, on account of the surrounding parts; but it is easy to conceive a single narrow border, when a row of

variegated Alyssum would look extremely well with a border of this blue Lobelia on each side of it. But the best thing of that sort, that I have heard of, is at a large place down the country, where one of the critics, and visitors to the Experimental, is on a visit. The narrow border there has the back and front row of *Lady Plymouth*, the old *Oak-leaf* variegated, or, more properly, *Graveolens*, or rose-scented Geraniums in the dwarf variegated form, with a row of *Lobelia speciosa* down the centre.

From the way our esteemed friend writes about that border, and other things of the kind, out of the common, I am quite safe in recommending it for good taste; but recollect that judgment is required to fix on the proper place for such a bed or border. So that, turn the question which way we will, we cannot get at the best thing, which all are running after, without being crossed by an alternative. Therefore, when you write to ask for the best plant, or plan, or anything soever, recollect this alternative,—mind the “if.” If you are in such and such a place; if the place has such and such soil, or aspect, or so high or so low; if your beds are large, or small, or medium; and if the bed is not to be surrounded with such and such colours; the plant we would name would be just the very thing for you, and all like you. But when we know none of these ifs, we may lead you and thousands astray. And yet, without an “if,” we have a constant run of questions coming from nowhere, as far as we know of. A man of sound sense and liberal education will sit down and actually ask, in black and white, which is the best Rose for the front of his house. None of us can answer the question; could any of you? A lady never writes that way, nor a cottager’s wife either. The lady would write for the “most suitable” Rose for the front of the house, in the north of Devon, or in the west of Ross-shire, or anywhere, stating where it is needed. Even the cottager’s wife would go so far as to say, that “their house” was next door to John Martin’s, which is something. But to write, and not to indicate the part of the country or kingdom the writing is from, is “just like some men,” and that is the only consolation in the matter.

But, what is the best plant or plants for a corner bed, or angular bed as we say; that is, the bed which is placed in the point where two walks meet or part; it may be a blunt point, or a sharp point, or a point which is neither sharp nor blunt, but rather long, and somewhat curved. Before answering the question, I shall put another, and say, What kind of bed would you like in that corner?

A friend of ours objects to the angular beds on the Rose mount at the Crystal Palace: one like them was made at home in the dead of the winter, but its appearance was so objectionable, that it had to be turfed over entirely. Nevertheless, the law prescribes one form, and one form only, for corner beds; they must fit the corner, or violate a principle. The principle may be applied in different ways, by different people, according to different tastes, but a principle cannot be violated without offending judgment. A man who breaks a rule, or principle, in any department of art, to please himself, has no room to grumble if the rule of fair criticism is broken across his shoulders.

The beds objected to on the Rose mount are strictly lawful, and to the point, but the point is so sharp, that there is not sufficient room to give a pleasant turn to the inner line, so that the shape is, of necessity, what it is. A diamond is the next best shape I have seen, for a blunt point, between two walks, when the right shape is departed from; and a circle is the most outrageous violation of the principle of fitness, which is the law on that subject.

Now for the best plant for a corner bed. The first requisite for the plant is, that it grows symmetrical, or can be so trained, because, whatever the style the garden may be planned on, the point between any two walks in it takes the

character of geometry, and is heightened, in the eye of judgment, by being planted with a geometrical or architectural plant, as we describe it. The bed is on the principle of fitness, and the plant or plants to fill it should be on the same principle. Then the question is not so much whether the plant is a Geranium, or a Calceolaria, or a Verbena, or a Petunia, but which of them grows the nearest to the architectural style, and also which kind the owner likes best; and here another rule may come in, and may hinder the owner from having his own way.

Suppose the piece of ground, or lawn, between the walks, and in advance of the corner bed, should be filled with beds. Such beds cannot be laid down at random now-a-days, there must be a rule, and a meaning for the placing of every one of them. They must form a group, and the colouring of a group is done by law and rule; therefore, it may be such, that the owner cannot have his own colour, nor his own way for the corner bed, without the risks and consequences of a broken law.

The only thing near despotic rule in such a case is, that one kind of plant only should be used in a corner bed, with a margin, or edging, unless two or three kinds of plants of the same family can be had of the same style of growth,—say three kinds of Geraniums, with three different tints, but with exactly the same style of growth, that would be better than one kind, if the tints agreed.

Last week I said that *Tom Thumb* and a purple *Petunia* would never do together, but that is wrong, and not what I meant. I praised the equal quantities of purple *Petunia* and *Tom Thumb* on the top of the Rose mount, and what I meant was, that an edging of purple *Petunia*, as in the pedestal beds, to a bed of *Tom*, would never do. D. BEATON.

SUMMER PRUNING AND TRAINING THE PEACH, &c.

LIMBS DYING—FRUIT DROPPING.

SEVERAL times in my practice I have had finely-balanced, fruitful Peach trees, realising somewhat the description given of some by Mr. Errington, where not a brick of the wall was found, that did not pay by a crop for its presence and expense. Under all modes of training, however, I have been sorely tried by a dying-off of some of the principal limbs of good-sized trees; those lying somewhat horizontally next the ground being generally the most affected. Even after such a misfortune, by twisting and bending, the wall may be pretty well filled, and the tree loaded with fruit for years; but the beauty and symmetry of the tree are gone, never to be recalled. These disasters have generally taken place after an extreme hard frost, when the previous mildness of the weather had not placed the trees entirely in a state of rest. I have tried Callow’s system of training, which has much to recommend it, so far as theory is concerned.

Not only is a clear advantage given to the lower sides of the tree, by getting them well developed before the centre is filled up, but, however horizontal, instead of partly vertical, the lower main branches may be, a powerful circulation is intended to be thrown into them, by elevating vertically the points of all such shoots. We have long acted on this principle, at times, for giving strength to a weak branch, just as, by bending the points downwards, we impair the strength of a luxuriant branch, and render it more fruitful. Even this, however, did not save us from mutilating the symmetry of large fruitful trees, by old, fine, main, branches dying out, and that, too, when I took means to guard them from excessive sun-heat at one time and extreme cold at another.

This I find to be an evil by no means confined to myself. I have lately seen it commence its operations on one of the finest young Peach walls I have witnessed for many years; and, having noticed in some other places, for a succession of years, that the walls were

supplied with riders and dwarfs, when, in ordinary circumstances, the dwarfs would have wholly filled the wall, or more, I was told by the gardeners, that this excessive cutting, so as from these small trees to command nearly fresh wood every season, was the only mode by which they could retain their trees in healthy fruitfulness. By such modes, fair crops are obtained; but then the walls have always a fresh-planted-like look, and many corners are generally unfilled. The vital forces acting on a much smaller space, it is but rare, that in such trees there is a tendency to limbs dying, even after a severe winter. Some friends have suspected that the evil was much to be attributed to over-cropping, and in this there may be something; but I have found that a tree that bore only a moderate crop, and with wood well ripened, has thus suffered, while a tree that has borne a heavy crop has passed unscathed, though its young wood seemed no better ripened than its neighbours: yet both as to stopping and pruning the shoots were treated in a similar manner; and there seemed to be nothing in the depth of the soil, its nature, nor the condition of the roots, to cause the evil. As a general rule, the finest looking, but not too luxuriant trees, were the most likely to suffer. As several correspondents have made similar complaints, and as when neither extreme over-cropping was allowed, nor extreme luxuriance, with its attendant general want of maturation were permitted, I could offer no advice, farther than to shelter by means of foliage or a thin covering, the stem and main branches from extreme heat in summer, and extreme cold in winter, I have given the matter this prominence, in order that the subject may be ventilated, and the opinions, practice, and ideas of others known.

Having lately alluded to young-trained, fresh-transplanted trees, and expressed an opinion, that, when planted at a suitable time in autumn, there was neither reason nor philosophy in shortening back the shoots of such trees, farther than was necessary to secure complete maturation of the wood, and for obtaining other shoots to fill the wall, &c., with main branches; keeping in view, that a great point in such training is to give a start to the sides of the tree, knowing that the centre will always take care of itself, and also that in all systems of fan training, the chief strength of the tree will be concentrated there, if the side branches are not started first, and rather vertically, in order that the sap may flow freely; I shall now consider that the tree has nearly, or wholly, filled its allotted space, and that the pruning and training it is to receive in summer are chiefly intended to keep it for years in a state of health and fertility.

Keeping this in view, a few facts are worthy of notice. First, all such trees, in favourable circumstances, produce their fruit chiefly on the wood of the previous season. In cold places, or, indeed, in any place deemed advisable, the fruit may also be produced on short spurs; but in general, the young wood system is the one that will be followed with most advantage. Secondly, in all such healthy trees, a great deal more wood is produced than can by possibility find room against a wall, so as to be presented to the full influence of sun and air. Two errors are here generally committed by young beginners,—leaving too much wood, and giving a prominence and favour to strong shoots over weaker ones. With respect to the latter, let it ever be kept in mind, that the stronger the young shoot, and the larger the leaves produced, the more room do the latter require, and the more sun and heat are required, so to mature the shoot that the buds at the base of the leaves shall be well ripened. Much experience leads us to prefer wood between the size of a good crow pen and a goose quill, instead of larger girth.

The production of so much young wood leads to the necessity of disbudding, as it is called, though not quite correctly so, as the process does not refer to removing buds, so much as to the cleanly cutting-out of most of the young shoots, when from an inch and upwards in length. This is done almost at once by some practitioners, who leave little more than the young shoot at the base of the fruitful one, and another at the point, to keep up the circulation of the sap to the fruit placed upon it. It is always of importance to leave the lowest shoot, so as to form the bearing shoot for next year, and just as many more as room can be found for. I prefer doing this disbudding a number of times, instead of once or twice, and just for the purpose of not giving the growing processes of the tree any sudden check, taking care to remove the prominent foreright shoots first,—that is, those on the front of the fruitful shoots, leaving the necessary ones to be at the sides of the shoot, and, if preference can here be given, choosing those on the upper side. In finally leaving no more than the requisite number to fill the allotted space, care should be taken that they are pretty equal as to strength. Any very strong luxuriant shoot that appears should be cut out at once, unless where fresh wood is wanted. But if there is an opening in the tree, and you wish fresh wood there, the stopping of such a shoot early, when about six inches in length, will enable you to get, from what would have been a useless, luxuriant shoot, some five or six well-ripened, fruitful ones. If a regular system of training is adopted, as soon as the fruit is swelling freely, the young shoot at the point of the bearing shoot, if not wanted for wood next year, should be stopped back within a few inches of its base, just leaving a tuft of leaves, to keep the circulation of the sap in the bearing part beneath. This will give more room and light to the shoot coming from the base, which will be the bearing shoot next year. A bushel of these disbuddings and shoots, bruised between a mallet and stone, made into tea,—by pouring over them eight gallons of boiling water, and, when that has stood covered up for an hour, poured off, and made into thirty-six gallons of liquid,—will prove an excellent wash for the trees, and do much to keep fly and thrip at a distance.

The third fact to which I would refer is, that even this limited quantity of young wood, if left its whole length, would, in general, produce more fruit than the tree could carry; and, if unshortened, the buds near the base would not be so likely to start into shoots next season; and, therefore, there would be spaces near the base of the main shoots apt to become bare of young wood. To remedy these drawbacks, it is very common to shorten such shoots, according to their strength, from a third to a fourth, at the spring pruning. When the work can be overtaken, I prefer doing almost the whole of such stopping in the autumn. After a certain period, the fresh wood formed at the points will need to be removed in spring, because, in general, it will not be sufficiently indurated.

But, besides that, after the middle of August the fresh leaves formed may rather be looked upon as exhausters, instead of caterers for the energies of the tree. When the fruit, then, is swelling freely, I would advise pinching out the points of most of these shoots, and cutting then a little farther back a fortnight or so afterwards, if you have not courage to do so at once. A few small, succulent shoots may come from the points; but that is of no consequence, as they can be removed in spring, if not before; whilst the stopping now will concentrate the vital energies of the tree in the shoots intended for bearing next year, and will cause even the lowest buds to be plump and

matured, as the sun and air will have readier access to, and more power over them.

I have said that, in general, this practice is to be preferred. In forcing, and sometimes, also, on the open wall, with such kinds as the French Mignonnes, and some other few instances, I have found nice grown fruitful shoots, that had no wood-buds, but the strong one at the point, and a cluster at the base. Stopping such shoots late in autumn, or stopping or cutting them back in spring, will be apt to give a fruitful shoot, without any growth at its point. Even upon these, the fruit will often swell as well as when there are leaves at the point, to draw up nourishment; but the experiment is one to be avoided rather than tried. In such cases, then, the wood should be left its whole length, even at the spring pruning. When the terminal bud is growing freely, its point may be nipped out; and, as in such cases there is generally a cluster of buds at the base, one of these, as it expands, must be chosen for the succession, or bearing shoot for the following year. Where trees are still too thick with young wood, no time should be lost in thinning and stopping.

FRUIT DROPPING.

During the present season, there have been great complaints of this. I almost wish some of mine had dropped, as now, when swelling freely, they are thicker than they ought to be. I have seldom had fruit drop. I think it must be owing to the following practice:—In June or July (I refer to outdoor trees), the border, for three or four feet in width, is forked slightly over. If dry, it is watered, and then covered with an inch or so of half-decayed leaves, which keeps excessive heat out and moisture in. So far as I am aware, Mr. Errington is the only gardening writer who has drawn prominent attention to the fact, that such mulching should *only* be applied after the sun has well warmed the earth. Judging from practice and observation, I have no hesitation in subscribing to the soundness of such deductions. R. FISH.

FORM AND OUTLINE OF CERTAIN OLD SHRUBS, EVERGREENS, &c.

WITHOUT affecting the powers of the painter, perhaps I may be permitted to point out the peculiar character possessed by some of our *old evergreens*, *shrubs*, &c.,—with reference to their aptitude or eligibility in adorning ornamental grounds, as we commonly find them.

As for Crystal Palaces, they need no reminders; their style and aim being peculiar, they do not fall in with general English gardening. People whom I sometimes converse with say, when they see a good thing,—“Oh, but you should observe how they do those things at the Crystal Palace, at the Duke of A.’s, and the Marquis of B.’s!” But, if good old English gardening is, with any sense or consistency, to be compared with those beautiful un-English places or palaces, surely the comparison is invidious and devoid of sense.

Therefore, it is by no means fair to compare an ordinary garden—albeit possessing good features—with those superb affairs, on which no expense has been spared. Nevertheless, we still find many excellent features in the “mansion-homes of England,” if I may take a liberty with Mrs. Hemans’ poetry.

I will pursue no classification, but merely advert to such as fall in my way. First, then, the old Cedar of Lebanon; not a shrub, however, but a real tree. What is its style and outline!—what words can express it!—dignified, massive, graceful! How important

this tree anywhere, but especially in the vicinity of architectural matters. Then, by contrast, let us look at the old Lombardy Poplar. I am aware that painters do not scatter the form of this tree over their pieces at random; but there are cases when, for the sake of powerful contrast, they are fain to seek its aid. But we must not be strictly confined to the laws of a picture, however correct the principles. Let us remember this one thing,—all important,—that we cannot walk “in and out, and round about,” as Swain, the Manchester poet, says; we cannot walk about the picture as we walk about the pleasure ground, every step bringing fresh associations; and surely this is a reason for departing occasionally from the painter’s ideas. This, indeed, is an important consideration at all times; and thus we find that persons imbued with good taste and some experience do not choose to judge from one spot, nor yet a second; but pace up and down, considering the bearing of this or that alteration from various points of view. Although the Lombardy Poplar, as used for contrast of form, against flat or horizontal lines, is of much value, yet it is a meddler with landscape, and cannot be allowed to spring up anywhere: it needs placing, if I may so term it.

But let us consider the old Holly, of time-honoured memory. Setting aside Christmas associations, what a fine thing an old Holly tree is, or a huge Holly bush, if you will. Most of our readers have seen a huge woodland Holly, bold in outline, massive, dark, and rich,—a match for the most imperious storm. On seeing such, we feel assured that a century would be no particular consideration with such a fine old fellow. And of what importance in our parks and shrubberies, as also for field hedges! Take, indeed, the Holly from the pleasure grounds of Britain, and one-half their dignity is destroyed at once.

Another fine and most elegant evergreen I may point to, the Hemlock Spruce, or *Abies Canadensis*. No tree can boast of more grace and elegance than this; it is one huge waving plume, from the summit to the very turf. It delights in a damp and partially shaded situation, and loves a soil somewhat unctuous and adhesive,—if of a dark character so much the better.

The deciduous Cypress, too, is a most elegant tree, when in foliage, although when in a deciduous state it is a most pitiful affair; but there is an airy elegance about the foliage which few other shrubs possess. It is more like some Tree Fern than any other shrub. And the old Stag’s-horn Sumach, is a fine figure of a tree, when it has attained any size: the foliage is boldly pinnated, and the marking of the whole outline very sharp and lively. The blossom, moreover, has a very handsome effect; and it is a free bloomer when of a little age.

The Red Cedar is a fine tree, of the spiry, or what may, perhaps, be called the columnar class. We have one in these grounds some thirty feet in height, clothed from the soil to the summit, and as compact as a column: a finer object can scarcely be seen. About twenty-eight years since, I planted one in a dell, near to a Cedar of Lebanon, of a century’s standing, in order to produce contrast, by the perpendicular as opposed to the horizontal. The effect has always been much admired. Those who have gone down by water to Richmond, from London, may have noticed the fine effect produced in front of certain villas, by the Lombardy Poplar, another spiry form, being placed near to the Cedar of Lebanon, as an associate.

The old China *Arbor vitæ* has a most dignified effect when it attains some size, and is grown compact. But, both with this and the Red Cedar, the snow is apt to make sad havoc, when they get old. The Ilex

is a tree of very grave, sombre, and massive appearance; but there is one misfortune attending it,—our hard winters are apt to break up its character, if not totally to destroy it, in many parts of the country.

Perhaps I may be allowed to include the Deodar, which, although not belonging to the older class of trees, or shrubs, is a tree which has now become thoroughly domesticated amongst us: few gardens but possess Deodars. To speak of its extreme gracefulness is almost superfluous; it is praised by all. There is one thing to be observed, however, that, although second to no tree in gracefulness, it must, I think, bend to the old Lebanon, in what I may call stern dignity; and the Lebanon has so many antique associations connected with it,—identified even with the name of Solomon. It has, however, such intrinsic merits, irrespective of all associations, that it may claim a kind of pre-eminence on that score alone. Only observe what sharp etchings it produces as a sky line. What other tree can give the same effect?

Another class of plants I would here point to, as of much importance in ornamental scenery. I mean the Yucca family. The *Yucca gloriosa* is, perhaps, the most highly esteemed; and a finer object, when in blossom, can hardly be conceived. It is majestic, bold, and even grand. It is a common remark, that every plant is a weed in its own country; but it would be hard to call this a weed, although we met with a forest of them. Wherever it is desirable to impress an exotic character, wherever what is called "sentinels" are needed, and near to buildings of any kind, there the Yucca will be found at home. We have one in blossom at this moment, about ten feet in height, and a most magnificent object it is,—admired by all. The Irish Yew is another most distinct and significant tree, wherever stiff formality, or deep contrast is required. And then its colour is so good; perhaps one of the darkest shades of green we possess.

It is a strange affair, that the Sycamore, which, when young, is the most common-place tree imaginable, should, when old, become so very picturesque, in many cases. When young it is a mere lean stripling, but as it attains age it becomes gathered into bold masses; and the general outline carries most marked indentations. But the same may be said of the Scotch Fir, and, indeed, of some other trees.

Many other trees might be pointed out, but space will not permit. Those named here are amongst the most prominent, as illustrations of the subject. I am here tempted to offer a few remarks on outlines, as too little attention, I fear, is paid to them; especially to what the painter terms the sky outline. This is of nearly as much importance as the ground outline, which is chiefly cared for. In how many pleasure grounds do we see what may be called rows of trees, mostly deciduous, and which, when denuded of their foliage, look more like immense piles of Peasticks than anything else. This is in great part owing to the flat-headed trees that are employed in the original planting,—to the want of spiry forms, and the want of trees distinguished for bold, abrupt, and almost angular masses of foliage. The Oak, with age, is noted for this character, as also the Scotch Fir.

But I would speak also with regard to what are termed indentations in the general outline. The removal of a single tree in such outlines will sometimes accomplish a great deal. But, at planting time, care should be taken to introduce trees of special character, for the express purpose of ultimately accomplishing a bold outline. The same may be said of the ground lines, in the front of which all lumpish and dead-looking forms should be avoided as far as possible. Speaking of outlines, there are some other trees or shrubs, companions of our childhood, which

ought to find a place occasionally in the margins of shrubberies. The Laburnum, Lilac, purple Beeches, and such like, prove of peculiar interest in such situations.

But, if some of our old shrubs, evergreens, and trees will bear high commendation, what shall we say of all the new accessions to our list during the last score of years? Look at the Conifers alone—a host in themselves. But I do think it invidious to mix up these older acquaintances with modern introductions. I would fain have their due meed of merit imparted to them, and that too in the very presence of their most formidable rivals, who, no doubt, want to push them off their stools. But it will be long before the old Cedar of Lebanon, the old Moss Rose, and our old favourite, the Mignonette, are totally discarded. Talk of new Moss Roses,—where is the kind that dares face the old Moss, when in his prime? R. ERRINGTON.

POMOLOGICAL SOCIETY'S MEETING.

(Continued from page 335.)

PLUMS.

Several large collections of Plums were exhibited, the most remarkable of which were the following:—

From Mr. WIGHTON, of Cossey Hall, a dish of exceedingly fine GREEN GAGES, from a very old standard, which is known to be of the second generation from the original tree; however, they were not larger, greener, nor richer flavoured, than are seen every day from healthy trees of the fiftieth generation. Also, a dish of VIOLET, a very hardy variety of the *Muscle* section, common in Norfolk, being propagated by suckers, and a great favourite in that district, on account of its always producing good crops. The fruit is purple, oval, and about the size of a large Damson; stone adhesive; only slightly acid; probably the same as is known in some districts as the *Violet Damson*.

Mr. W. INGLE, gardener to C. G. Round, Esq., Birch Hall, Colchester, sent a SEEDLING, as the earliest yellow Plum he knew, from a standard growing in an indifferent position. The fruit was below the medium size, oblong; colour greenish-yellow; stone adhesive; very like a variety called the *Harvest Plum*, which is common in the Kent market gardens. The flavour and general appearance were not considered sufficiently good to make it worthy of cultivation.

FRANCIS DAVIES, Esq., M.D., of Pershore, sent specimens of his BRANDY GAGE, which were in a better condition for judging of its merits than last year. The fruit was below the medium size, slightly obovate, very ripe, and somewhat shrivelled; colour greenish-yellow, tinged with russet; stone adhesive; flavour sugary, and richly vinous. It was thought that if grown on a wall, and allowed to hang, it would dry into a delicious sweetmeat.

JEMMY MOORE, a local variety, reported to be a great bearer; appeared likely to be good for culinary purposes. In appearance it closely resembles *Denyer's Victoria*, or *Alderion*, from which, however, it differs, in its flesh adhering to the stone, instead of separating, as in the other variety.

JEMMY COMBE, also a local variety. This, if distinct from *Magnum Bonum*, is only so in being somewhat larger than the latter is usually seen.

Mr. F. DANCER, of Little Sutton, sent a collection, containing, amongst other kinds, CHAPMAN'S PRINCE OF WALES, which is the best variety of the *Orleans* section, being equally hardy, larger, and productive; flesh more melting, and flavour sweeter. This variety of *Orleans* is really useful as a dessert fruit.

MITCHELSON, a medium-sized purple variety, of the

Muscle section, said to be hardy, a great bearer, and much valued in the market for preserving purposes; the fruit is oval, stone adhesive, and flavour much resembling the *Wine Sour*. It was considered worthy of being more extensively cultivated.

Mr. LANE, of Berkhamstead, brought the WASHINGTON PLUM, from a wall in remarkably fine condition.

APPLES.

Mr. A. GODWIN, of Ashbourne, sent specimens of two varieties, that are esteemed in Derbyshire first-class, new, kitchen varieties.

LORD SUFFIELD, which was sent also by Mr. TURNER, of Slough, to the last Meeting, is considered an improvement on the *Keswick*, which it much resembles in its conical form, close eye, and pale green colour; it is equal in earliness and productiveness; less acid; and its superior solidity renders it less subject to be bruised when gathered and harvested, and makes it keep longer in good condition.

CLOSEBURN'S SEEDLING, a variety, in form and appearance, much resembling the *New Hawthornden*: and, that it may be compared with this at the next Meeting, Mr. Godwin has been requested to send it again. The skin is thin, core small, and flesh firm. The flesh boils into a perfectly white, slightly subacid pulp.

Mr. F. DANCER sent some fine CELLINI PIPPIN. This very excellent culinary variety is reported to be losing favour in many districts on account of its cankering. It would be very desirable to ascertain exactly in what localities, soils, and exposures, this tendency has evinced itself; and the Council will thank every member who possesses this kind to communicate, before the next meeting, his experience regarding it, at the same time stating full particulars concerning the circumstances under which it is grown.

Many other fruits of various kinds were sent to be named.

THE APPLE—ITS HABITS, CULTURE, &c.

(Continued from page 327.)

WANT of space in our last number prevented our continuing the observations on fungi,—that pest of the Apple trees, making them look, occasionally, as though they had been scorched.

The matter of soil has certainly something to do with their production, for, assuredly, hot and dry soils, and a long continued dry atmosphere, are eminently productive of them. Here preventive measures may be brought to bear; and here it is, as in many other cases, that sound loams, by furnishing a permanency of moisture, prevent their ravages. As to remedial measures, the water-pot, in liberal hands, must be resorted to.

In *Diseases*, we have the canker and the withering of shoots, or portions of shoots. As to canker, that is generally understood to be incurable; at least, nobody has hitherto been able to extirpate it from such kinds as the Ribston Pippin, although innumerable remedies have been tried. However, it so happens that cankered trees frequently continue to bear very well, and are worth retaining. This is often the case with the Ribston Pippin, which sometimes produces the finest-looking fruit from the most cankered boughs; indeed, the same may be said of many other kinds. When, therefore, such trees are considered worth retaining, the only thing that we can do, is to simply prune away those which have become unprofitable. Applications of cowdung, lime, and loam, have been suggested as encouraging new bark; but, although such be the case, the fire still smoulders beneath.

The withering of the shoots is altogether another

affair. I speak here of the withering of the extremities of the shoots. This frequently happens in trees of every age, from the circumstance of their roots having descended into a bad subsoil. Now, a solid and dryish clay is not a bad subsoil, neither do I conceive is a pure sand; but there are other kinds of subsoils of a mixed character, and not unfrequently of a mixed colour, and which, occasionally, hold much water: these are practically termed sour soils. Such have a strong tendency to produce these disastrous effects. They are, I think, rarely produced by surface soils. But we often see young trees, which have never penetrated the subsoil, decaying at the points; this, as far as I know, is chiefly confined to kinds, and may be classed with the canker.

I well remember that about forty years since there was a great panic round London as to the Apple question. People said that all Apples were wearing out. There were no crops for two or three years, and the trees blighted and cankered amazingly. The American blight, also, began to make a great noise; and many blue-aprons affirmed that it was introduced from America, through the medium of the American Poplars. How this came to be current, I know not, neither can I flatly contradict it.

As to canker, it was a custom in some nurseries, when a standard Ribston or some other kind cankered, so as to be unsaleable, to cut off the head to a tolerably low level, with the observation that it would make a capital dwarf. I well remember the introduction of the Hawthornden: a great fuss it made, and deservedly so, for the trees produced, for a few years, most splendid crops. But they were short-lived, and after a run of about a dozen years people began to complain bitterly of the canker. Since then they have gradually crept out of cultivation. The wearing out of Apples has been a much debated question; the same as the wearing out of Potatoes. Now that the latter do wear out, or become so utterly unprofitable and worthless as to be superseded by other kinds, which, at first, produce not a Potato more per acre than did their progenitors, is a certain fact. Well, this is either wearing out, or something equivalent; perhaps some other title would be more palatable. And so with the Apples: they have not failed for lack of good soil; our Ribstons have not been neglected,—pampered, indeed, at times they more often have been.

R. ERRINGTON.

GREENHOUSE BOILER ABOVE GROUND.

I WISH to heat a glass-house,—say about 60°,—with hot water. The house is twenty-five feet long, twenty feet wide, eleven feet to the drip, raised from the ground about one foot on large stones, and a wooden floor. Can it be done without digging any hole for the boiler, &c.? I know it would look unsightly above the ground, but I do not mind that. What quantity of pipe would it take?—A SUBSCRIBER.

[When you contemplate heating only one house from a boiler, there is no objection, if you wish it, to have the boiler and furnace above ground. In some cases it is very desirable,—as where water is found near the surface. Heat may also be economised by having the boiler inside the house, and the furnace door merely outside. In such circumstances care should be taken that all the pipes are as high, better if higher, than the level of the boiler. To keep such a house at 60° in winter, which we presume is what you mean, would require the best part of 100 feet of four-inch pipes. Of course, to secure that heat from May to November, half the quantity, or about sixty feet, would do. The circulation will be greater if the lowest pipe in the house is as high as the top of the boiler; if higher, all the better.]

A MICROGRAPHIC STUDY OF THE DISEASE OF SAFFRON KNOWN UNDER THE NAME OF TACON. By C. MONTAGNE, D.M.

THE Saffron Crocus (*Crocus sativus*, L.) is a plant known at a very early period, and admitted, from the beauty of its flowers, as an ornament of our gardens; its economical uses, however, and its medical qualities render it still more important, and altogether worthy of fixing our attention. The interest attached to its successful culture has made it a matter of duty to study carefully the diseases to which it is subject, either with a view to their prevention, while there is still an opportunity, or to limit, as much as is in our power, the terrible ravages which they commit.

Amongst these, there are two especially which have long excited the attention of cultivators. The first, which is not, properly speaking, a pathological affection, though frequently productive of death, is due to the presence of a parasitic fungus, living at the expense of the plant which it attacks. This fungus was classed amongst truffles by Duhamel, who gave the first good description of it in the "Memoirs of the

Academy for 1728," and has since been figured by Bulliard, under the name of *Tuber parasiticum*, which Persoon afterwards changed into *Sclerotium crocorum*. Decandolle finally raised it to the dignity of a genus, and called it *Rhizoctonia*. Whatever name we may retain, whether, with Decandolle and Fries, we adopt the genus *Rhizoctonia*, or, with Desvaux and Lévillé, we consider its species as *Sclerotia*, this singular parasite consists of sclerotoid, almond-shaped tubercles, united by byssoid filaments going from one to the other, forming a sort of subterraneous net. It is by means of these filaments, which are attached to the rootlets of the plant, or which creep over the surface of the bulbs, after having pierced their integuments, that the parasite appropriates their nutritious juices after the manner of *Cuscutas*, and induces, if not direct death, at least a weakly development.

The second disease has received from cultivators of Saffron the vulgar name of *Tacon*, an old French word, borrowed, probably, from the Italian *Taconne*, which signifies in either language a piece of leather patched on a shoe-sole. Our first knowledge of this pathological affection is due, as far as I know, to Fougereux de Bondaroy, who has described it as follows in the Memoirs of the Academy of Sciences at Paris for the year 1782:—

"Brown spots are first observed in the tissue of the bulb, which injure its substance, and, though the coat seems sound, the spots beneath enlarge in proportion as the malady increases, the texture is destroyed, the ulcer (for so this disease may be termed) gains ground, and consumes the flesh until it is changed into a black dust; the coats themselves finally change colour, becoming red; the bulb rots, or rather is reduced to a substance resembling vegetable mould.

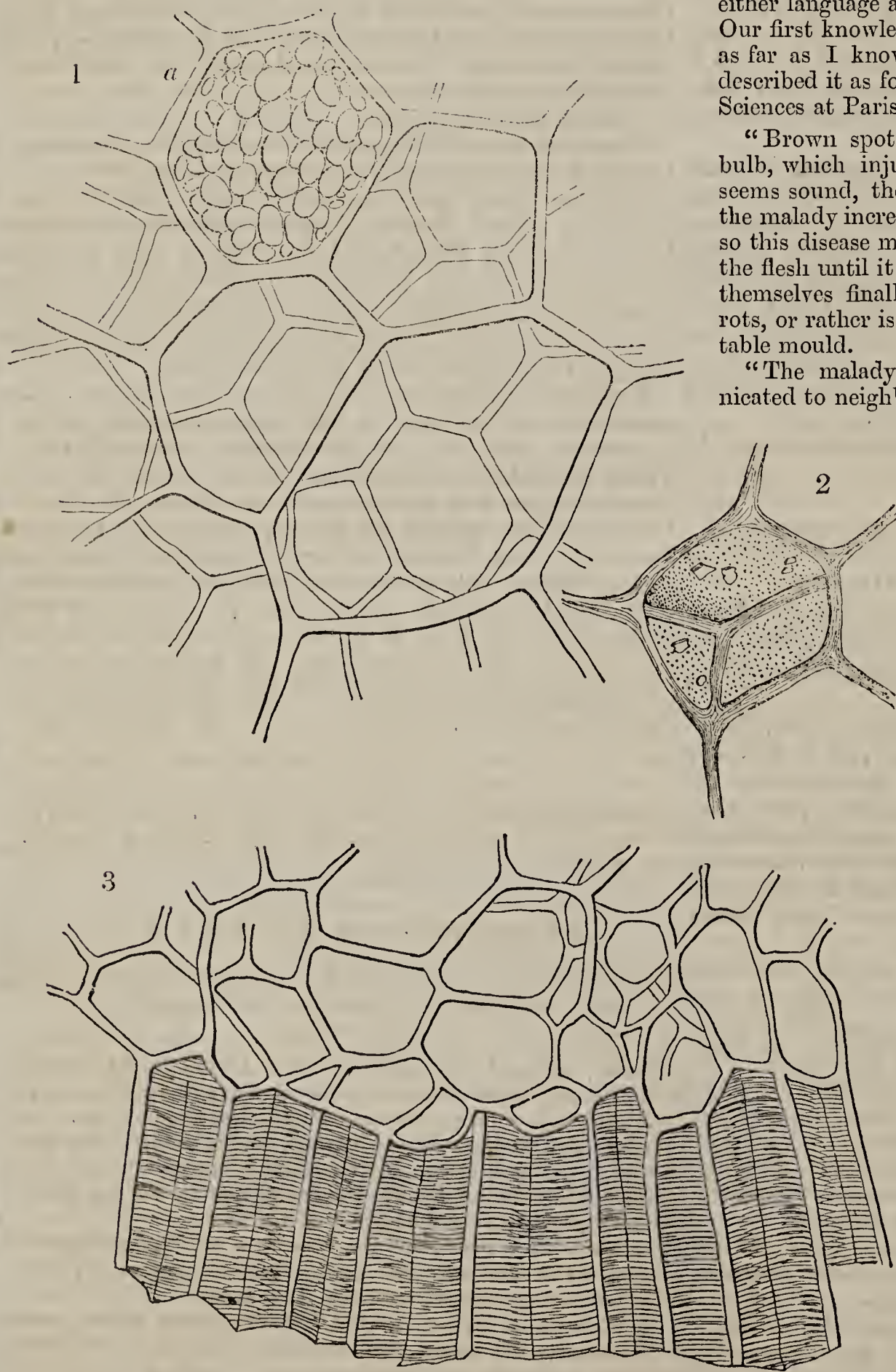
"The malady increases rapidly; the Tacon is communicated to neighbouring bulbs; but for this end they must either be in contact, or the dust resting on them must communicate the disease, and this communication is effected slowly. . . . This dust is different from that which results from decay. It has rather appeared to me to be of the nature of bunt in wheat."

The author then compares bunt with the Tacon in respect of propagation:—

"In wheat it is the starch-bearing part which is corrupted; in the bulb also it is the starch which is first destroyed, and the bulb equally with the wheat turns into a black foetid powder."

From all which it may be inferred that the disease which attacks the bulbs of Saffron, for the communication of which I am indebted to M. Rayer, is not due to the presence of a *Rhizoctonia*, but is clearly the result of that sort of decay which is called Tacon. The present state of science requiring our investigations not to stop at the surface of things, but that they should be pursued as far as our powers of observation permit us to penetrate, it will not be thought superfluous if I add the following details to the description of Fougereux. They will enable us to appreciate correctly the mode of change of the tissues examined under the compound microscope, and will complete the very imperfect information at present in existence on the nature of this affection.

At the beginning of the malady we perceive on the surface of the bulb, if we separate slightly the fibres of the coat, little orbicular brown spots, of the size of a lentil. I believe that the point of origin is generally that of the



Dissections of Saffron Disease, from a drawing by M. Montagne. The figures magnified 300 diameters. 1, healthy cells, of which a is filled with starch; 2, a diseased cell; 3, stratum of compressed cells.

rootlets of the plant; the tissue is a little swollen at the circumference of the spots, so as to form a sort of raised ring, which is less strongly coloured. Gradually these spots enlarge, and assume a darker tinge, which passes at last into black. They increase insensibly, and, from the confluence of many individuals, lose their original orbicular form. The malady, however, does not extend merely in width; the disease of the tissue penetrates into the substance of the bulb, destroying the walls of the cells and the fecula which they contain. At this period those deep excavations commence, which do not cease to be formed till the whole bulb is destroyed. The cavity hollowed out in the substance of the bulb is not at first visible, in consequence of the persistence of the coat of the bulb, which forms a sort of tympanum round the cavity, and does not burst till a very late period. This happens at last from the always increasing extension of the decay which constitutes this formidable disease. When arrived at the last stage, all the base and even the centre of the bulb is destroyed, and the whole presents to the eye nothing more than a black dust, formed by the remains of the parenchymatous cells of the peridia of a fungus of which I shall speak presently; of the coats, or, according to M. Payen, of the tegumentary strata of the grains of fecula; and, finally, which is not the least remarkable, of an insect which lives in the centre of these *débris*; but this insect is exactly the same as that which has been pointed out by M. Rayer to M. Guérin Menneville as inhabiting the diseased Potatoes, and which the latter has named *Tyroglyphus feculæ*.

Now, if we make a vertical section passing through the axis of the bulb, and examine under a lens the relation of the parts, we perceive that beneath this pulverulent black stratum, composed of the productions I have just enumerated, the parenchym is of a reddish yellow tinge, and softened to the depth of from one-half to two-thirds of a millimètre; beyond this second layer the substance of the bulb has at present remained sound. We want now to ascertain what a microscopic examination of the parts will teach further. In order to ascertain this, we must take with a razor an extremely thin vertical slice, comprising at once, for the purpose of comparison, both the sound and diseased portions of the bulb; if the slice be then placed on a slip of glass in a drop of water, a magnifying power of fifty diameters will show the whole at one view. The same slice should then be transferred to the plate of Schiek's Compressor, and after compression examined with a power of 380 linear. The cells which are infested, and form the base of the excavation, will be found to have lost their transparency; their once delicate tissue is thickened and granular; their crystal-white has become dark-brown; and, finally, the fecula has vanished, or only a few scattered injured grains remain; meanwhile their polyhedral form continues unaltered: this, however, is not the case with another stratum lying beneath the first, and which separates it from the sound parenchym. This is formed of cells perfectly hyaline it is true, but whose grains of fecula have entirely disappeared. It is about the eighth or tenth of a millimètre in thickness. The absence of the fecula is not the only phenomenon which makes it remarkable. The primitive dodecahedral cells, pressing against each other, form prisms of five or six faces, and of the length which I have assigned to the whole stratum. These prisms thus disposed exhibit a number of transverse lines which are formed by the lines of junction of the faces of the cells. I cannot give a better notion of it, than by comparing it with the structure of the axis of *Chorda filum*, which I was the first to demonstrate, with this difference however, that in the *Alga* the meshes of the net are, or appear to be, quadrilateral, and, besides, less pressed against each other. Finally, beyond the layer just mentioned, we find the parenchym of the bulb in its normal condition, and the hyaline cells, of which it is formed, filled with numerous perfectly healthy grains of fecula.

The details into which I have just entered, respecting the ravages caused by the Tacon, present the closest analogy between that disease and the Potato murrain. Read, in fact, the descriptions which have been given of it, which, from its frequent occurrence, are unhappily too numerous; remark especially the identity of the injury to the tissues, the more or less complete evanescence of the fecula (an observation already made by Fougereux), the brown colour, and the granular thickening of the cells of the parenchym—all,

even to the presence of *Tyroglyphus feculæ*, confirms the analogy between the two diseases. And, if we look to the causes, and make a parallel between the conditions of development, we shall be the more convinced of the justice of the comparison. There would, indeed, be some essential difference between them, were we agreed on the indispensability of the presence of *Botrytis infestans* on the leaves, &c., of the Potato before the attack of the tubercles; but botanists are still at variance on this much contested point.

I have shown above that Fougereux compared the Tacon to bunt in wheat, but in this particular he is clearly wrong. The tissues affected belong to very different organs, and have nothing in common except enclosing in their cells amylaceous matter. The labours of the Messrs. Tulasne have shown that the morphosis of bunt (*Tilletia caries*) is different from that of smut (*Ustilago*), though at maturity it is scarcely possible to distinguish generically the species of these two genera. The progress of the malady and its consequence are, therefore, quite different in the two plants.

As to the means of arresting the propagation of the Tacon, or to prevent its reproduction the following year, in the absence of any observations of my own, I must again have recourse to the Memoir of M. Fougereux. He informs us that the most approved remedy is immersing the bulbs in an alkaline solution, as in thick lime-water, &c., in which they are to be steeped for two hours. He proposes, also, leaving them some days in wine-lees.

Fougereux informs us, moreover, that the *Rhizoctonia* may exist at the same time on the Saffron bulb as the Tacon.

I have said above that the coat of the bulb, blackened by the progress of the disease, retains for a long time its original form. On this a species of Perisporium is frequently developed, which I have called *P. crocophilum*, Mont. It is characterised: "Peridiis minimis ovoideo-globosis atro-nitentibus apice poro pertusis à basi fibras irradiantes emittentibus; nucleo primitus celluloso, cellulis subconcatenatis, sporis globosis minimis."—M. J. B.

I take the opportunity of adding to this memoir a few words on some bulbs of Tulips which were attacked by *Sclerotium Cepæ*, Lib., and *Sporotrichum polysporum*, Link. I have laid before the Society of Biology an account of a disease very prevalent in Tulip roots sent me by M. Rayer. I have clearly established the fact that it is due to parasitic fungi. In some, between the scales of the bulb, I found a large number of globular grains, black and shining when fresh, and of the size of a grain of hemp. These parasitical bodies, already observed by Madame Libert in Belgium, and in England by Mr. Berkeley, upon bulbs, whose further development they had prevented, have been referred to *Sclerotium* by these two cryptogamists. Other bulbs presented as the cause of evil a very different parasite from the first. The roots and the base of the scales were deformed by bundles of white threads, which, examined under the microscope, belonged certainly either to *Sporotrichum polysporum*, Lk., or to some very nearly allied species.—(*Horticultural Society's Journal*.)

BEE-KEEPING IN DEVON.—No. I.

COMMENCEMENT OF AN APIARY—SHALLOW 8-BAR BOXES versus 7-BAR BOXES—ADVANTAGE OF A LARGE SWARM—DISADVANTAGE OF AN OLD QUEEN.

IN submitting to the readers of THE COTTAGE GARDENER some slight sketches of apiarian proceedings, I would premise that, although by no means a novice in bee-keeping, I am recommencing the pursuit in a locality, which, being in the outskirts of a large town, I have already proved to be but indifferently adapted for bee-pasturage, and in fact far below the general average of the county of Devon.

In May last, I purchased three swarms, which were placed under a south-east verandah, about eight feet apart, and which I shall designate respectively Nos. 1, 2, and 3.

No. 1 came home on the 29th May, weighed 3½ lbs., and the queen, having issued from an old stock which swarmed last year, cannot be more than a year old. Lodged in Taylor's dividing hive, thirteen inches square, by seven inches deep. *Eight-bar hive*.

No. 2, on the 30th May, weighed also 3½ lbs.; age of queen

uncertain. *Seven-bar hive*, eleven inches and a half square by nine inches deep.

No. 3, on the 29th May, weighed 4½ lbs.; probably an old queen, being a first swarm, from a first swarm of last year. *Eight-bar hive*, same size as No. 1.

All these swarms were brought to me in common straw hives, and were transferred to their present domiciles by being knocked out on a cloth the same evening, when wooden hives were immediately placed over them, slightly raised on a couple of sticks, and all was right by the next morning. I would strongly recommend this mode of proceeding to all purchasers of bees from cottagers, as being much more convenient to the latter, and as avoiding the risk of broken windows, disfigured paint, and fallen guide-comb, all of which are the probable results of placing bee-boxes in inexperienced hands.

The following table gives the net weight in each case, and is chiefly interesting as showing the comparative progress of the two swarms (Nos. 1 and 2), of exactly similar weights, hived within a day of each other, and placed side by side; but housed in boxes of different proportions. One the old seven-bar box, the other the shallow eight-bar box, which has been recently introduced, of which the first mentioned appears to have done the best. It also exhibits, in a striking manner, the *advantage of numbers*, and the *disadvantage of an old queen*, as exemplified in No. 3, which, after taking a decided lead, and keeping it, gradually fell off in working, and will probably not survive longer than next spring, unless provided with a new queen.

Date.	No. 1.	No. 2.	No. 3.
1858.	lbs. oz.	lbs. oz.	lbs. oz.
June 7	6 8	5 8	8 0
" 8	7 8	6 8	10 2
" 9	7 12	6 12	10 4
" 11	8 8	7 12	11 6
" 12	8 8	7 14	11 6
" 13	8 8	8 0	11 8
" 14	9 0	8 8	12 8
" 15	9 10	9 0	13 2
" 17	9 10	9 2	13 0
" 19	9 10	9 4	13 4
" 20	10 8	10 6	14 4
" 21	10 0	10 4	14 0
" 22	9 8	10 4	14 8
" 23	9 4	*	13 14
" 24	9 2		13 12
" 25	9 4	9 0	13 12
" 26	9 4		13 12
" 29	9 12	9 12	14 0
July 5	11 0	10 4	15 4
" 16	15 0	15 4	19 8
" 21	14 6	14 12	18 12
Aug. 4	12 0	12 2	16 0
" 10	11 4	11 8	15 6

The day following (August 11th) all the hives were removed to a large heath, about eight miles off. Had this been done four weeks earlier, it would doubtless have been better, as it will be perceived that in all three the culminating point was reached on the 16th July. The journey to the heath, and its results, may form the subject of a future communication. In the meantime, I shall be happy to reply to any inquiries from the correspondents to THE COTTAGE GARDENER, and the Editor is welcome to give my name and address to any gentleman who may be interested in Devonshire bee-keeping.—T. W. W.

GREENHOUSE FERNS.

THESE lovely greenhouse plants will, as a matter of course, bear the open air in summer, and will be greatly benefited, especially the larger growing kinds, by being placed out of doors during the summer months; but the more delicate species should be kept constantly under glass. I have found a frame or cold pit a good habitation for them. In such a receptacle they are not so subject to the variations of the

* This hive escaped weighing on three occasions by being very much on the alert. It always showed more bees at the entrance, and roared louder in the evening than the others.

weather, and can be protected from excessive rains and heavy storms of wind, and also from the glowing midday beams of a summer's sun. The coarser kinds will bear all these with impunity; but I would always keep them in a rather shady place, and am always careful, in all cases, to set the pots on a thick bed of coal ashes, to keep the worms out of the pots. Whilst out of doors they must be carefully attended to, and supplied abundantly with soft water. Towards the end of September let the pots be all cleaned, and the plants removed into the greenhouse. Such as are deciduous will now be losing their fronds: cut these off, and place the pots under the stages or platforms, but always within sight, and accessible, for they must be kept moderately moist through the winter. I have, I trust, made the culture of greenhouse Ferns understood by these, and my last remarks, and I now proceed to fulfil my promise of giving a list of such as will thrive in the mild temperature of the greenhouse.

- ACROPHORUS hispidus (hairy). New Zealand. New.
- ACROSTICHUM squamosum (squamosose or scaly).
- A. brevipes or calloefolium (calla-leaved).
- A. crassinerva (thick nerved).
- A. conforme (like).
- ADIANTUM Moritzianum (Moritz's). Very beautiful.
- A. assimile (assimilated). Freec to increase.
- A. cuneatum (wedge-shaped). Very useful for bouquets.
- A. setulosum (bristly). Very neat.
- A. affine (related).
- A. formosum (handsome).
- A. hispidulum (rather hairy).
- A. pubescens (woolly). Common, but very pretty.
- ALSOPHILA australis (southern). A large Fern. New and fine.
- A. Capensis (Cape). A tree Fern. Six feet high.
- A. radens (thorny). A tree Fern. Very fine.
- ANEMIDICTION fraxinifolium (Ash-leaved).
- A. hirtum (rather spiny).
- A. phyllitidis (long-stalked).
- ASPLENIUM brachypterum (cut-winged). A new neat Fern, drooping, and fit for suspending.
- A. caudatum (tailed). Bears an embryo plant at the caudate extremity.
- A. lucidum (shining).
- A. dispersum (spread). A neat desirable species.
- A. appendiculatum. A good Fern.
- A. Mexicanum (Mexican). Well suited for a glass case.
- A. axillare (axilled). A drooping, graceful Fern.
- A. monanthemum (one-flowered). Very neat.
- A. „ proliferum. Plant-bearing variety.
- A. præmorsum (bitten). A fine Fern, suitable for a pedestal or a vase.
- A. palmatum (hand-shaped).
- A. strigillosum (straitened). A new Fern, of great beauty.
- A. Shepherdii (Shepherd's). Very fine.
- A. obtusatum (obtuse). A thick-leaved, handsome Fern.
- A. polyodon (many-toothed).
- BLECHNUM occidentale (western).
- CYRTOMIUM falcatum (sickle-shaped). A fine, dark green, nearly hardy, Fern.
- CHEILANTHES Sieberi (Sieber's). A new Fern, well adapted for baskets.
- C. lendigera (C. tenuis of gardens). A scarce, very pretty, small Fern.
- C. profusa (profuse). Requires to be frequently divided and repotted, to keep it healthy and neat.
- DAVALLIA elata (tall). A new and very elegant Fern.
- D. Canariensis (Canary). The well-known Hare's-foot Fern.
- D. bullata (blistered).
- D. dissecta (dissected). There is a dwarf, distinct variety of this species in culture.
- D. elegans (elegant). A stout-leaved, fine Fern.
- D. pentaphylla (five-fingered). Very distinct.
- D. pyxidata (box-like). Thick, shining fronds, of great beauty.
- DICKSONIA antarctica (antarctic). The true Tree Fern of New Holland. Slow growing, and very handsome.
- DORYOPTERIS palmata (hand-shaped). Very distinct.
- D. sagittifolia (arrow-head-shaped). A very striking, handsome Fern.

DRYNARIA Billardieri (La Billardièrè's).

D. Fortunii (Fortune's). A new species, from China.

D. pustulata (pimpled). Very curious in its mode of growth.

DOODIA caudata (tailed).

D. lunulata (crescent-shaped).

D. aspera (rough). A very handsome species.

D. blechnoides (blechnum-like). Distinct and beautiful.

GONIOPTERIS Fosterii (Foster's). A new, handsome, rare Fern.

GONIOPHLEBIUM appendiculatum. A beautifully-marked Fern. Each leaf is distinctly spotted with brown.

G. Catherina (St. Catherine's). A low, neat Fern.

GRAMMITIS rupestris (creeping). A desirable Fern to grow on walls, or small rough stones in damp places.

HYPOLEPIS repens (creeping). A strong-growing species.

LOMARIA discolor (two-coloured). New, and handsome.

L. Gillesii (Gillie's). Suitable for a glass case.

LYGODIUM articulatum (jointed). A greenhouse climbing Fern. Very handsome.

LITOBROCHIA vespertilionis (bat-winged). A desirable species.

LASTREA eburnea (ivory). A fine Fern, with purple stalks.

L. Canariensis (Canary Isles). A noble Fern.

L. decomposita (decomposed). Easy to grow, and very handsome.

L. pubescens (downy). Compact in habit, and very handsome.

MOHRIA thurifraga (frankincense). A scarce, handsome species.

NEPHRODIUM articulatum (jointed). New and distinct.

N. molle (soft). A common, but handsome Fern.

N. multilineatum (many-veined). A truly beautiful Fern, with distinctly visible veins.

N. unitum (united). A dissimilar distinct Fern.

NEOTTOPTERIS vulgaris. (The Bird's-nest Fern of New Holland.)

NOTHOCLÉNA vestita (clothed). A little, neat, scarce Fern.

N. lanuginosa (woolly). Also small and pretty.

N. Marantæ (Maranta's). Copper-coloured on the under side.

N. tomentosa (downy).

This genus should be carefully managed, or the plants will perish. Keep them on a shelf close to the glass, and *never wet their leaves*.

NIPHOBOLUS lingua (tongue-like), *N. pertusus* (bored), *N. rupestris* (rock). All dwarf creeping Ferns, suitable for rockwork, or to cover the soil in pots where large Ferns are growing.

ONYCHIUM Japonicum (Japan). One of the most elegant and most suitable Ferns for a greenhouse.

O. auratum (cared). New and distinct.

PLATYLOMA atro-purpurea (dark-purple-stems). Striking and beautiful.

P. calomelanos (calomel). Neat and beautiful.

P. flexuosa (zigzag). A slightly twining Fern, of great beauty.

P. cordata (heart-shaped), *P. rotundifolia* (round-leaved), *P. falcata* (sickle-shaped). *P. Brownii* (Brown's). The *Platylomas* are the most distinct of all Ferns, and, being evergreen, are highly worthy of general cultivation.

PLEOPELTIS lepidopoda (wolf's-foot). A broad-leaved species. New.

P. musæfolia (musa-leaved). Rare, and very handsome, something like the Bird's-nest Fern.

P. pinnatifida (cut). A low-growing Fern, with the fronds deeply lobed, or cut.

PHLEBODIUM stigmaticum (veined). Suitable to cover the sides of a pot, or basket. Very curiously veined.

P. squamulosum (squamosé). A tiny gem.

P. Aureum. The well-known Golden-spored Fern, with very handsome, noble fronds. Easily grown.

POLYPODIUM effusum (spreading). A beautiful, finely-divided Fern.

P. spectabile (showy). A large-growing, compact Fern, of great beauty.

P. plumula. A Fern growing about a foot high; graceful in habit.

P. rugulosum (roughish). A peculiar Fern, with long, fast-creeping root-stocks. Well adapted for suspending.

POLYPODIUM trichodes (thrice-divided). A noble Fern, three to four feet high.

P. filipes (slender). A curious-creeping, small Fern.

POLYSTICHUM aristatum (bearded). Glossy, dark-green fronds.

P. æmulum (pleasing). A beautiful Fern.

P. coriaceum (leathery). The fronds of this fine Fern last a long time in perfection.

P. falcinellum (small-sickle). Elegant and palm-like. Very desirable.

P. flexum (bending). Stout leaves, with creeping root-stocks. New.

P. mucronatum (sharp-pointed). A remarkably distinct species. Very handsome.

P. vestitum (clothed). A low-growing, compact, new species, suitable for a Wardian case.

PTERIS aspericaulis (rough-stemmed). Fronds, when young, of a rich crimson colour. The mid-ribs of the fronds retain this hue when fully grown. A great acquisition, but requires a warm greenhouse.

P. arguta (sharp-notched). A large, well-known Fern.

P. crenata (crenated or scalloped). An old Fern, of great beauty.

P. Cretica (Cretan).

P. geraniifolia (Geranium-leaved). A most elegant small Fern.

P. felosina (heavy-smelling). Fronds red when young.

P. hastata (halbert-shaped). A common, but very handsome Fern. The broad-leaved variety is particularly so.

P. heterophylla (various-leaved). A small species, of neat habit.

P. intra-marginalis (inner-margined). Distinct and beautiful.

P. macrophylla (broad-leaved). A noble, fine Fern.

P. Kingiana (King's). Bright green, spreading fronds.

P. longifolia (long-leaved, especially the terminal one). A well-known, common, but handsome Fern.

P. semi-bipinnata (half-pinnate). A curious Fern, with the fronds distinctly cut off on the under side. Very odd and striking. New, and, I fear, scarcely hardy enough for the greenhouse, but worth a trial.

P. serrulata (serrated). A well-known, common Fern. The fronds keep a long time fresh in water.

P. tremula (shaking). A fine old species.

P. scaberula (roughish). A new, most elegant Fern, which every Fern-grower ought to procure.

SITOLOBUM adiantoides (maiden-hair-like). Very handsome.

S. Davallioides (Davallia-like). A noble Fern, approaching to a tree-like habit.

SCOLOPENDRIUM Krebsii (Krebe's). A neat Fern, with a short, erect stem.

WOODSIA mollis (hairy). A greenhouse species, of a pleasing character.

WOODWARDIA radicans (rooting). A rather coarse, but easily-cultivated Fern. Will grow in dense shade.

There are some other species that will bear the temperature of the greenhouse, but they are either very scarce, or not enough distinct.

T. APPLEBY.

CHINESE MODE OF TAKING HONEY.

DURING my sojourn in this place, I had an opportunity of witnessing a novel mode of taking honey from bee-hives. The Chinese hive is a very rude affair, and looks very different to what we are accustomed to use in England; yet, I suspect, were the bees consulted in the matter, they would prefer the Chinese one to ours. It consists of a rough box, sometimes square, and sometimes cylindrical, with a moveable top and bottom. When the bees are put into a hive of this description, it is rarely placed on or near the ground, as with us, but is raised eight or ten feet, and generally fixed under the projecting roof of a house or outbuilding. No doubt the Chinese have remarked the partiality which the insects have for places of this kind when they choose quarters for themselves, and have taken a lesson from this circumstance. My landlord, who had a number of hives, having determined one day to take some honey from two of

them, a half-witted priest, who was famous for his prowess in such matters, was sent for to perform the operation. This man, in addition to his priestly duties, had the charge of the buffaloes which were kept on the farm attached to the temple. He came round in high glee, evidently considering his qualifications of no ordinary kind for the operation he was about to perform. Curious to witness his method of proceeding with the business, I left some work with which I was busy, and followed him and the other priests and servants of the establishment to the place where the hives were fixed. The form of the hives, in this instance, was cylindrical; each was about three feet in height, and rather wider at the bottom than the top. When we reached the spot where the hives were placed, our operator jumped upon a table placed there for the purpose, and gently lifted down one of the hives and placed it on its side on the table. He then took the moveable top off, and the honeycomb, with which the hive was quite full, was exposed to our view. In the meantime an old priest, having brought a large basin, and everything being ready, our friend commenced to cut out the honeycomb with a knife made apparantly for the purpose, and having the handle almost at right angles with the blade. Having taken out about one-third of the contents of the hive, the top was put on again, and the hive elevated to its former position. The same operation was repeated with the second hive, and in a manner quite as satisfactory. But it may be asked, "Where were the bees all this time?" and this is the most curious part of my story. They had not been killed by the fumes of brimstone—for it is contrary to the doctrines of the Buddhist creed to take away animal life—nor had they been stupified with fungus, which is sometimes done at home; but they were flying about above our heads in great numbers, and yet, although we were not protected in the slightest degree, not one of us was stung, and this was the more remarkable, as the bodies of the operator and servants were completely naked from the middle upwards. The charm was a simple one; it lay in a few dry stems and leaves of a species of *Artemisia* (Wormwood) which grows wild on these hills, and which is largely used to drive that pest, the mosquito, out of the dwellings of the people. This plant is cut early in summer, sun-dried, then twisted into bands, and it is ready for use. At the commencement of the operation which I am describing, one end of the substance was ignited and kept burning slowly as the work went on. The poor bees did not seem to know what to make of it. They were perfectly good tempered, and kept hovering about our heads, but apparently quite incapable of doing us the slightest injury. When the hives were properly fixed in their places, the charm was put out, and my host and his servants carried off the honey in triumph.—(FORTUNE'S *China*.)

ON THE SANDS.

(Continued from page 332.)

The habit of a true naturalist is to look at the ground on which he treads, just as Frenchmen say of an Englishman that he is always looking at his boots. Do not hurry on in any vague hope of meeting with a shoal of Anemones, but scrutinise, as you go, the cracks and fissures; and wherever there is a thick fringe of Algæ, or even a heap of drift, stoop down and make an examination. If not used to shore hunting, depend upon it you have already passed by many a treasure that an experienced eye would have detected. When left by the tide, the sea flowers no longer disport themselves like radiant stars, but shrink up into button covers, and are often barely perceptible, even when immediately under the eye. Vertical planes are those they most prefer, and it is on the sides, rather than the upper surfaces of the wet rocks, that the search must be directed. Suppose you come to a small escarpment, jagged and slippery, and with numerous overhanging ledges. There you will be sure to find booty. In the chinks where the water still remains you will probably find the stony Coralline, which looks very much like a purple Lichen: the plants are spread in circular patches on vertical surfaces, and when full grown they resemble twigs of Ling. The white specimens will tempt you, because of their superior beauty, but the purple ones are those that you may expect to live. Where you find a fine purple patch, chip to the base of it, without

jarring the plant from its foothold, and quickly drop it into a jar of water. By and bye, when you have leisure to examine it with a lens, it will be found to swarm with life; for it is the favourite haunt of a vast variety of minute creatures, that are sure to disport themselves at night, if a lighted candle is placed beside the vessel. Higher up you are almost sure to find hundreds of the common Strawberry Anemone, looking like so many Chestnuts put to roast in the sun. Do not overload your vessels with these,—the temptation is great, because of their abundance and beauty when expanded; but, on the other hand, do not despise them because they are so common, for they are the hardiest of all their race, and present a great variety of colours—crimson, vermilion, brown, green, and olive.

As you get towards the lowest ebb of the tide, your gatherings will increase in value. You may even meet with the grand *Dianthus*, and the curious *Anguicoma*, cast up into a hollow, and there blooming in their full lustre like coronals of true ocean flowers. The Daisy is another sometimes so found, and the best of it is, that in such positions, having been recently deposited in such sites, they are generally attached to small stones and shells; sometimes a large parent, surrounded by a dozen little ones, all removable without injury, on the shell to which they have affixed themselves. Here, too, you may expect to find some useful mollusc and crustacea. Get a dozen of the common winkle, for there is not a more interesting creature anywhere about the shore. When feeding on the front glass of your tank, it will afford you many an hour's amusement, to see how his rasp-like tongue scrapes off the conferva; and with a lens you can detect the rows of teeth and spiral action of the lingual organ passing to and fro between the sheathing lips. Besides this, they are wonderfully hardy. I have some now that have endured the heats of two summers in the hottest room in the house, and are as hearty as when first captured. Then there is the little yellow winkle, which resembles the banded snail of the hedges,—not so plentiful as the common sort, nor yet so hardy, but still worth capture to the extent of half a dozen. Another useful and elegant mollusc is the *Trochus*, which may be described as a winkle with a conical shell, regularly marked with spiral lines and dots—*Trochus siziphyruss* being the most common. More crabs will turn up, and if you catch sight of any apparently empty winkle and whelk shells, take them out, and see if they are not inhabited by hermits, a few of which are most acceptable, as contributing to the variety of the gathering. You are scarcely to expect to find *Serpula*, but after a storm they are to be found at low-water mark; the sign of their presence is a large whelk or oyster-shell, covered with their convolved tubes. Though the footfall may cause the creatures to ensconce themselves closely, you have only to look inside the tubes for a scarlet disc, and you may be sure you have a living specimen. *Terebellas* are plentiful in rough blocks of soft sandstone, and among fragments of chalk and limestone the wonderful *Pholas* may be found lurking. Here, too, you may meet with that curious example of marine life called "Dead Man's Fingers," *Alcyonium digitatum*, a soft, fleshy mass of Polypes, by no means tempting to the fingers, when found exposed to air and sun, but which, when placed in a vessel of sea-water, reveals its true character, as a community of creatures adhering together to one common base.

It is well to know what to avoid, as well as what to secure. Barnacles are of little use—muscles and limpets must not be gathered in quantity; most univalve molluscs are apt to die, and cause a black putrescence, especially when under the care of beginners. *Crassicornis* is a tender creature, and can only be kept for any length of time by adepts. I do, however, know of many aquarists who deny the difficulty, and could name instances of its living in the same tank for more than two years, and producing young. I had a birth myself this spring, but the parent died a few days afterwards. That it is not the best *Actinia* for beginners is evidenced by the fact, that Mr. Llord refuses to sell it, in order that its death may bring no blame upon him. A specimen measuring five inches across the disc, which I brought from Bournemouth last autumn, lived four months; but it had a vessel to itself, and was plentifully fed. Avoid all the coarse tangle and sea drift, such as *Fucus*, *Laminaria digitata*, &c., except for purposes of packing; for this they are acceptable.

When the return of the tide puts a stop to gathering, is the time to think of packing-up. Sort over your jars, and arrange your stock, as far as you can, in classes. Molluscs will carry best in water, if they are to go any distance; but, if the transit is to be soon over, they may be packed in wet seaweed in the basket. Crabs may be packed in the same way, except hermits; they must go in fresh-dipped sea-water, and as few together as possible, for fear they should get up a fight. If you should have had the good luck to meet with a hermit, with a parasitic *Anemone* on the shell, give him a jar to himself, with a tuft of *Algæ*. In turning out the *Actinæ*, those that have attached themselves inside the jars must not be disturbed. Let them remain there till you get home, when you can either detach them, or break the jar, and place the fragment on which the creature is fixed in the tank, so as to do away with any necessity for handling it. In this way the gatherings may remain for forty-eight hours without danger, but it is not advisable to keep them so confined any longer than is absolutely necessary. In the final arrangements for carriage, see that the blocks of stone are so arranged that they cannot jostle about, and that they do not press on any of the creatures. There should be a tuft of waste *Algæ* between every lot of animals; before leaving the shore the basket should be dipped into sea-water, to drench it through, or at least well sprinkled, to preserve a thorough moisture.

One more hint occurs to me. Avoid any spot on the coast where land springs abound; as in the vicinity of a stream of fresh water but little will be found. But, if you are more enthusiastic than delicate, take care to hunt any dark hollow where the water is foul, and you are pretty sure to find something worthy the search. The finest lot of *Anthea cereus* I ever met with, was in the outlet of a town sewer, where, in the midst of a mass of black sludge, the *Antheas* were expanded like a cluster of blue rosettes. No wonder it may be kept in beer and soapsuds, and even in urine.—SHIRLEY HIBBERD.

THE FIVE PEAS.

THERE were five Peas in a peashell; they were green, and the shell was green, and therefore they fancied that the whole world was green—and they had a right to do so.

The shell increased in size, and so did the Peas. They made very good domestic arrangements, placing themselves in a neat row. The sun sent its warm rays on the pod, and the rain kept it fresh; they were sheltered and comfortable—had light by day, and darkness by night, as it should be; and the Peas became larger and always more thoughtful, as they sat idle there, for as yet they had no companion.

"Shall we always be kept sitting here?" said they: "we shall become quite hardened staying here so long. We cannot help fancying that there must be something going on outside."

But weeks passed on; the Peas became yellow, and the pod became yellow: "The whole world is turning yellow," said they—and they had a right to think so.

At length, they felt a pulling at the pod; it was broken off, and fell into a human hand, and from thence into the pocket of a jacket, along with several other full peashells. "We will soon be opened," said they—and they waited expecting it. "Would that I could foresee which of us will ramble the furthest," said the smallest Pea—"the shell will soon give way."

"All must happen as it is ordained!" said the largest. Crack went the pod, and all five of the Peas rolled out into the clear sunshine; they lay in a child's hand; a little boy looked at them, and remarked that they were nice Peas for his popgun; and one of them was forthwith consigned to the gun, and shot away.

"Now I fly away, out into the wide world; catch me if you can!" and it was off.

"I," said another, "shall fly straight to the sun; it is a superb peashell, and will be very comfortable for me." Off he went.

"I shall sleep wherever I alight," said two of the others, but we shall roll far enough;" and they first rolled on the floor, and then were also fired from the gun.

"All must happen as it is ordained!" exclaimed the last, as it too was shot away. It flew up on an old board, under a garret window, and alighted in a hole in the wood, where

there was some moss and soft earth; the moss covered it up, and there it lay hidden, but not forgotten by its great Maker.

"All must happen as it is ordained!" it exclaimed.

In the little garret room dwelt a poor woman, who went out during the day to clean stoves, to chop firewood, or do any other manual work; for though she was clever, and capable of doing many better things, she was extremely poor; and at home in her little chamber, lay her daughter, a half-grown girl, so slender and delicate, for a whole year she had been confined to bed, hovering between life and death.

"She is going to her little sister," said the woman. "I had these two children; it was hard work for me to support them both, but it pleased our Lord to take one of them from me; would that I might be permitted to keep the other, who is still with me! but God does not see fit to separate them, and she is fast going to her little sister."

The sick girl, however, lived on; she lay patiently and still the whole day, while her mother was out trying to earn something.

It was spring, and early one morning, just as the mother was going out to her day's labour, the sun shone brightly through the little window down upon the floor, and sparkled upon the panes of glass.

"What little green thing is that peeping up behind the window, and waving in the wind?" said the young invalid; and her mother went to the window and opened it a little.

"Why, it is a tiny plant," said she, "that has shot up with small green leaves. How could it have got into this crevice, I wonder? It will be a little garden for you to look at."

So the little sick girl's bed was moved nearer to the window, where she could see the little sprouting plant, and the mother went away to her work.

"Mother, I think I am getting better," said the little girl, one afternoon. "The sunshine has been so warm to-day, the little plant thrives nicely, and I think I shall thrive too, and be able to get up and go out into the bright sunshine."

"Would to God you could!" exclaimed the mother; but she feared that never would be. She put a little stick close by the green sprout, which had inspired her daughter with the pleasant thoughts of returning health, that twining round it, it might not be snapped by the wind; she fastened a bit of pack thread to the board, and tied the other end to a little projection above the upper framework of the window, that the tendrils of the young plant might have something to cling to, and creep up as they grew longer; and every day they were observed to have run up higher and higher.

"It is actually beginning to flower!" said the woman one morning; and now also she began to entertain the hope and believe that her poor sick girl would recover. She had remarked that latterly the child had been more lively, that for the last few mornings she had raised herself without assistance in her bed, and sat up, looking at her little garden of one plant. The following week, the girl was able to leave her bed for an hour or two. She sat cheerfully in the warm sunshine, near the open window, on the outside of which bloomed a lovely pea-flower. The little girl stooped her head and softly kissed the delicate blossom. That day was like a festival in the humble garret room.

"A kind Providence has planted this sweet flower up here, and permitted it to thrive, in order to convey hope and gladness to you, my beloved child—and to me!" said the happy mother, smiling gratefully on the flower, as if it had been an angel messenger from Heaven.

But what became of the other Peas—those others which were scattered abroad in the wide world? "Catch me if you can," fell into the spout on a roof, and came next into a pigeon's craw, where it lay like Jonah in the belly of the whale. The two lazy ones landed in the same sort of place, and were eaten by pigeons, and certainly that was becoming solidly useful; but the fourth, who aspired to reach the sun, fell into the nasty gutter, and lay days and weeks in the stagnant water, until it became quite swelled.

"I am becoming enormously stout?" said the Pea; "I shall burst at this rate. I am sure no Pea ever was so large, and that none can equal me in size. I am the most remarkable, doubtless, of the five from the old pod."

And the gutters agreed with it.

But the young girl stood at the window with sparkling

eyes, with the glow of health upon her cheeks, and she folded her delicate white hands over the pea-blossom, and thanked the Giver of all Good for it.

"I prefer my Pea!" said the gutter.—(*Little Pilgrim.*)

THE VINE MILDEW.—The Vine mildew having made its appearance in one of my houses, I tried the following plan of curing it:—Having shut the house quite close, I got four large flower-pots, and half filled them with lumps of quick-lime; having sprinkled it with water, I strewed a handful of sulphur on each pot, and let it steam up through the Vines till it quite filled the house with steam. On the following morning I opened all the ventilators, and gave the house a good syringing till I quite saturated it. I repeated the same the following day, when I found that the mildew had wholly disappeared. I have also tried the same remedy for red spider in a Peach-house, and I soon found it vanish. If gardeners will use sulphur in this way, they will find no ill effects from it; as soon as they have strewed it on the lime they can leave it till the following morning.—(J. JONES, in *American Hort.*)

QUERIES AND ANSWERS.

BOX EDGINGS.—WINTERING FUCHSIAS, &c.

"I have some Box edging, that has not been clipped this year. Would you advise me to clip it now, or wait till next May? Will you also tell me the best way to winter Fuchsias?"—J. G.

[You may clip your Box edging at once, with out delay, as well as again next May, if required.]

The answer to the question, "Which is the best way to winter Fuchsias?" will hardly, perhaps, give the kind of information which is required by our correspondent. But the best way to keep Fuchsias over the winter is, to leave them in the same pots and soil in which they flowered, not to prune them till the end of February, nor to give them more water than will keep the soil from getting quite dry. Any glass-house, which is large enough to give them standing room, will suit them, and the same treatment, as to air, heat, and cold, as is given to Cape Heaths, is the best treatment for Fuchsias,—that is to say, the thermometer should not be lower in the morning, after a hard frost, than down to 30°, nor higher, by fire heat, than 35° or 36°. A very slight degree of frost is an excellent thing for all green-house and frame plants, which are entirely at rest for the winter. They cannot be made to sleep, as it were, without as much frost as that. But some people think, that by withholding water from such plants till the soil is as dry as the road dust, they put their plants completely to rest; and so they do, but it is at the expense of the plants, by an unnatural process, which destroys the tender ends of the roots, and all the very little roots; whereas, by just keeping the soil from getting quite dry, not a single root is lost, and, by lowering the air in which they stand to the freezing point, and even below it a point or two, the thing is done as naturally as it could happen in any part of the world. All the old and standard Fuchsias, and all the standard and bush Myrtles, Oleanders, Hydrangeas, with all forced Roses, Plums, Apricots, Peaches, Vines, and other fruit-bearing plants in pots, ought to be put to rest in the same natural way, rather than by allowing the earth about their roots to get quite dry. While we are on the subject, let us remark, in passing, that this, the best way to keep Fuchsias over the winter, is also the best way to keep all the old bedding Geraniums which are lifted from the beds. Who is there amongst us, however, who has these means of preserving any one kind of common plant over the winter? Her Majesty has not one-fourth of the necessary requirements for such things, and her Fuchsias, of which she is very fond, never get the "best way" in winter, and hardly the second best way in summer; and yet, with it all, Her Majesty's seedling Fuchsias are quite as good as those of Banks', or any other of her loyal subjects, and her plants are grown as well, and look as well as the royal gardeners can make them.

For the sake of saving space it is a good plan to prune

down Fuchsias after they have done flowering, as soon as the roots have been allowed to become nearly dry, as in this way they occupy no more room than the pots in which they stand.]

HYDRANGEA JAPONICA.—ACACIA ARMATA MANAGEMENT.

"I have a plant of the *Hydrangea Japonica* in the window of my room, which has not flowered this summer, although it seems to be in a very healthy condition; foliage large, with stems upwards of two feet high. Now, I want to know whether it would be better to cut it down, as it is sending out several strong branches about three inches above the soil, and let these flower next summer, or to allow the old ones to remain, and take the young ones off, and strike them? The plant is at present in an eight-inch pot.

"I have likewise a plant of *Acacia armata*, which I purchased of a nurseryman last year, and which flowered profusely; but it was in bud when I had it. Now, I wish to know how to treat this plant, so as to get it to flower? It has made a great deal of wood since it has done blooming."—A CONSTANT SUBSCRIBER.

[If your plant of *Hydrangea Japonica* is not too large for your window, we would advise you not to cut it down at all. The upper and more plump buds, on the present year's shoots, are more likely to yield you abundance of bloom. Allow the lower shoots also to grow. If you want young plants, prefer cutting away some of the weaker shoots, and making them into pieces of two buds each,—one to be cut across at the base for the bottom of the cutting, and the other to be left to make the top of the young plant. The young strong shoots now coming will make fine blooming shoots for a second year. We fear that, as they are at present only a few inches in length, and August is now nearly over, the ends will not be sufficiently matured to bloom next season, which they could hardly fail to be on this summer's shoots. To accelerate this, set your plant in a sunny spot out of doors, and give only as much water as will keep the leaves from flagging to any extent. By October the leaves will be getting yellow, and falling, and after that the plant will be safe anywhere if kept free from frost, and will want little light—if the absence of light would make it more easily kept—until the buds begin to break and swell by the returning warmth of spring. Then bring the plant to the window; and, after pruning away some of the dead points and the weakest buds, remove some of the surface soil, and replace with fresh, rich compost. When the blooms show, give manure waterings, to increase their size.]

Acacia armata to bloom. You do not say if your plant is still in the window. If so, give all the light and air possible, in order to mature the wood it has made. This would be rendered more sure, could you place the plant in a sunny spot out of doors, merely defending the pot from the sun's rays by placing round it a piece of matting, or cloth, or hay-band, or merely a green sod. The plant would require to be secured from drenching rains, and to be housed by the second week of October. The roots must not suffer for want of water; but as the days shorten much less will be required. Give all the light and air possible in winter, and just keep from frost; and, when spring comes, we feel pretty confident you will have masses of bloom.]

BULBS FOR CONSERVATORY BORDER.

"The south border in my conservatory is twenty-four feet by two feet. This autumn I propose to plant it with bulbs of different varieties, such as Hyacinths, Tulips, yellow Crocus, white Crocus, and Cyclamens. May I ask you at what time the different bulbs must be planted, so that they will be all in flower at the same time about the end of January? Also, are there any other bulbs suitable for planting with them in a border of the above description?"

"Is the *Tacsonia ignea* best suited to a stove or greenhouse?"—AN AMATEUR.

[We do not think we could give you the assistance you desire, without bewildering you, unless we had more precise

information. Most of the bulbs you allude to begin to grow about one time, but they flower at different periods, and that greatly in proportion to the treatment they receive, as respects heat, &c. Now, in your border they would receive similar treatment. With very little heat in the house, your Crocuses, Snowdrops, Dog's-tooth Violets, &c., would be in bloom at the time you desire; but it would require a considerable degree of heat to bring in Hyacinths, Tulips, and Narcissus at the same time, which would be too much for Cyclamens; and, if they were not started early, the moisture would be too much for them. Better pot your Hyacinths, Narcissus, Tulips, &c., as soon as you can, and give a little potted assistance in December and January, and then plant out.

We are not acquainted with *Tacsonia ignea*, and should be glad of information respecting it.]

FUCHSIAS.

"A Lover of Fuchsias, who has little opportunity of seeing the collections of others, would be glad to know if there are any really better Fuchsias, in their different classes, in cultivation than the following:—WHITE VARIETIES.—*Duchess of Lancaster*, *England's Glory*, *Clio*, *Silver Swan*, *Fair Oriana*, *Maid of Kent*, and *Countess of Eglinton*. RED VARIETIES.—*Brilliant*, *Souvenir de Chiswick*, *Little Treasure*, *Tristram Shandy*, *Etoile du Nord*, *Little Bo-Peep*, *General Williams*, *Prince Albert*, and *Wonderful*."

[The best answer to the above is the following memorandum from the third part of the "Illustrated Bouquet," a periodical which want of space prevents our more particularly noticing just now.

"The following varieties of the florists' race of Fuchsias are recommended as exhibition flowers:—

"CRIMSON, with violet and blue corolla.—*Prince Albert*, *Souvenir de Chiswick*, *Prince of Wales*, and *Wonderful*.

"CRIMSON, with large cup-shaped violet and blue corolla.—*Catharine Hayes*, *Charlemagne*, *Donna Joaquina*, and *Tristram Shandy*.

"CRIMSON, with black-violet corolla.—*Etoile du Nord*, and *Emperor Napoleon*.

"RED, with double purple corolla.—*Hendersonii*, *Piolet*, and *Malakoff*.

"RED, with white corolla.—*Mrs. Story*, *Countess of Burlington*, and *Queen Victoria*.

"WHITE, with light scarlet corolla.—*Queen of Hanover*, *Fair Diana*, and *Royal Victoria*.

"WHITE, with scarlet and crimson corolla.—*England's Glory*, and *Clio*.

"WHITE and BLUSH WHITE, with violet and lavender corolla.—*Venus de Medici*, *Silver Swan*, *Fairest of the Fair*, *Maid of Kent*, and *Duchess of Lancaster*."

The following four new splendid Fuchsias are beautifully figured in that number of the "Illustrated":—

"1. *Prince Frederick William of Prussia*. A noble flower; tube bright carmine red, much recurved; corolla a wide cup, blue, changing to plum colour.

"2. *Rose of Castille*. Blush-white tube; corolla purple, cup-shaped.

3. *Loch Catrine*. A very beautiful variety for general decorative purposes; sepals rich, bright, coral red, or crimson scarlet, broad and recurved, finely contrasting with the very deep violet, almost black, cup-shaped corolla.

"4. *Guiding Star*. This variety is free-branching, and drooping in habit; the flower-tube slender; bluish-tinted white; sepals broad, white, gracefully recurved; corolla cup-shaped, of a rich violet-purple colour."

Here, then, is the cream of twenty-five years' breeding in-and-in among the Mexican Fuchsias, without a drop of the blood of *fulgens*, *corymbiflora*, or any of the large-leaved or long-tubed species.

The next question about Fuchsias is,—Which are the best six, or ten, or twelve kinds, to make standards of, for planting out in the garden during the summer, and to be kept half dry, away from the frost, during the winter? *Carolina* is the best one, we know of, for that purpose, out of a large number of kinds we have seen as standards. And the last

question we should like to hear discussed by "Our own Correspondents," is,—Which are the best kinds of Fuchsias, for using as climbers and pillar plants, in the conservatory? Here, again, *Carolina* comes in as the best, to our knowledge, *Scarletina* the next best, and *Don Giovanni* the third best. *Serratifolia* taking the lead through the winter.

A portion of the roof of the conservatory at the Experimental Garden has been covered for the last six or seven years with *Fuchsia Carolina*, and *F. scarletina*, and nothing more beautiful and appropriate can be conceived. The stems are nearly as thick as one's wrist at the surface of the ground. They shoot straight up to within a foot of the roof, without a branch, in the centre of the house, and there branch out in large circles, the branches being trained to wires. They are close spurred at the end of November, the time they cease, or nearly cease blooming; every leaf is then stripped off, and they give no shade during the winter. They are in bloom again by the 1st of May, and give the best kind of summer shade to the rest of the plants below. They have never been syringed, but the air of the house is kept cool and moist; first, with the hexagon netting, where the climbers do not cover; and, secondly, by a liberal use of the watering-pot. *Camellias*, *Azaleas*, and *Rhododendrons* are kept in the house all the summer, in order to have them in bloom through the winter, without forcing. The red spider has never touched any of the plants.]

AUTUMN-SOWN ANNUALS.

"A Subscriber wishes to be informed when is the best time for sowing annuals in the autumn? which are the most suitable kinds? whether they require any protection in the winter? and what is the best soil for them?"

[Annuals that are sown in the autumn, to bloom in the flower garden, at the end of spring, do not require protection in winter; but there are greenhouse annuals, for sowing in the autumn, and they must have greenhouse plants' protection. But every one of the hardy autumnal-sown annuals would do better if they were in pots and pits, or greenhouses, under skilful management. It is now high time to sow autumn annuals. The two *Silenes*, pink and white, are up with us, and so are the pink and white *Virginia Stock*. The *Collinsias* and *Gilia tricolor* are also up, and some are yet to be sown. By the way, all ours that are up are from self-sown seed, up and down the mixed borders. We find they do better with less care than the same kinds sown in the best manner; poor thin soil is the best to sow them in. The soil is such as has not been stirred more than two inches for the last two years. It is not too late to sow herbaceous *Calceolarias*, the best bedders of all the annuals. When they first appeared, we sowed ten thousand of them ten times told as late as the 20th September; and we prefer September-sown *Calceolarias* to this day, but they are not so hardy, nor quite so good for the beds, as they were twenty-five years back. The *Nemophilas*, *Clarkias*, *Goodetias*, *Silenes*, *Collinsias*, *Virginia Stock*, and *Gillias*, are the best of all the annuals to shift for themselves. *Erysimum Perofskianum* is also a safe and very good one. *Limnanthes Douglasii* is a nice thing, in poorish soil. This would be a good time to begin *Lobelia speciosa* from seed, instead of cuttings, or to begin with. A sixpenny's worth of it, to be sown and treated in every respect like *Calceolaria* and *Mimulus* seedlings, would make plants enough for a garden of ten acres by planting out in time next May, and it is far easier to do them in winter than in the hurry of spring work.]

LAYERING ROSES—CARNATIONS—MOWING MACHINE.

"Last November," writes *A Country Subscriber*, "I made a good bed of Roses (hybrid perpetuals). They have done well, and made some strong shoots. Shall I layer down these shoots this autumn, or next spring, or shall I cut them away? Of course the shoots I refer to are from the Roses themselves, not from the Briars on which some of them are grafted. Can you tell me of a good, hardy, perpetual, yellow Rose?"

[You must not layer one of these shoots this autumn, nor next spring, nor cut an inch from one of them till the top bud is in leaf next April. To layer Roses is a nursery process, with which we should like to inoculate the proposals of all our readers and their friends. But they must not layer them in the flower garden, for it does not look well. Your Roses on their own roots have done well, and something more,—they have done most excellently for one growth; otherwise you would not have shoots to puzzle you at the end of the first growing season, and such a season for Roses as the last has been. You must have neither cutting nor pruning till the last moment to which it is safe to defer that work, and for this reason, that the shoots are too strong yet to flower as freely as they ought. By leaving them unpruned till the latter part of April, you take the easiest means, both for them and for yourself, to reduce their strength; as all the extra work of the roots from November to April, and part of the sap now in draught, will be taken from them by one cut to each. But cut no more than six inches from the top of the longest, and train the rest of the shoot and shoots just like other bedding plants, that are too big or too high for the bed, when every bud, except a few at the bottom, will make a flower-shoot next year. A great number of fresh shoots will spring from the bottoms, and you must go over them at the end of May to thin; then cut the weak ones right out, and the very strong ones quite out, and leave the middling ones to flower that same autumn. If they do not do so when standing, you must train in July; but do not cut out the first-trained shoots till the winter. Then in November—that is, next November twelve months—take every one of them up, prune away the trainers, and cut back the upright shoots to different lengths, the strongest being cut to just one-half its length. But recollect that none of this will suit worked Roses.]

“I wish to have a bed of Carnations and Picotees next year. Would you recommend the layers to be put out, when rooted, in the bed this *autumn*, or not till *spring*?”

[Plant them out the moment they are ready; but, in the hands of the more skilled, they are best in pots till March.]

“I have rather a large extent of lawn to keep in order, and use one of the mowing machines, which cuts a breadth of twenty-two inches; but I find that it takes three men to work it, thus interfering a good deal with the other operations of the garden. Is there no machine capable of cutting this width, well and quickly, when drawn by one man and pushed by another?”

[The mowing is entirely a question of “bottom.” We had just such a machine as yours drawn by one of the lads, and held, not “pushed,”—the cutter must not push under any pretence whatever,—by a tall, long-legged man. The length of the piece was 360 yards; there was a heap of cut grass at both ends, and one in the middle, so that one ordinary box held the grass of 180 yards. How many yards will fill your box? and what kind of bottom? Last week, we saw Budding’s original machine at the Crystal Palace, and much of the grass there, we will vouch for it, will need two, and sometimes three men to draw, and one to guide and cut, but never to push.]

THE EFFECTS OF CHLOROFORM ON BEES.

As the season has arrived at which many of your readers will be thinking of, or are engaged in, the deprivation of their hives, a word of warning may be useful to some who might otherwise be induced, by the remarks made by a writer in *THE COTTAGE GARDENER* of last year, to contemplate using chloroform as a stupifying agent.

Although long ago recommended to me, yet it was chiefly in consequence of those remarks that I was led to try chloroform for the purpose of more easily stocking a very difficult, single-combed, observatory hive. The result was pitiable and disastrous. A great number of the bees left their stings in the bodies of the others, causing much loss of life. The rest were in a miserable state,—apparently drowned, and exhibiting little prospect of ever coming to life again. Although the prescribed quantity of chloroform was not exceeded, nor the bees shut up so long as was named (ten minutes), yet the bees were wet, as if drenched with honey, and looked black and

shrivelled. In about half an hour they began to revive, though in such a state as to give but small hopes of their ultimate recovery. I was then obliged to leave, after adopting every precaution to promote their resuscitation, and was agreeably surprised the following morning to find them pretty well got up into the hive,—not, however, without great sacrifice of life.

But, bad as this affair proved, I thought I would give chloroform one more trial before passing judgment on it; and I had not long to wait for an opportunity. Towards the end of the same month (June) I placed a second swarm in a Stewarton hive, having waited for some time in vain for a first swarm. In about a week they had made a considerable quantity of comb, when a very large first swarm was brought in from the country, which I joined to it in the usual way. The following day the whole population suddenly left the hive, and were (in my absence) secured in a straw skep. As I was very desirous of stocking this Stewarton hive, and thought that probably the queens were all dead, and I should only have the trouble of rehiving if I placed the swarm again in the boxes, with the view of ascertaining whether there was a queen or not, I resolved once more to try chloroform. The straw skep was literally full of bees, and a more magnificent swarm I never saw. I placed the hive over a box made for fumigation; the sponge containing the chloroform being fixed on an upright stick in the centre. On first removing the hive, I found that, owing to the large number of bees, only about half were stupified. I added a little more fluid, and replaced the hive. In a few minutes all were safely down. I soon found the queen, but apparently dead, though she revived a little in my hand, and I then placed her with those of her subjects who seemed to be most active. The appearance of these bees was worse than in the first case; and thousands were again stung, the stings being stuck in all parts of their bodies. The effect on the drones was in each case most singular, and I believe that not one of them could survive the application. The end of this affair was, that, with the exception of a very small cluster, all the bees were irretrievably injured, and I thus lost a swarm of not less than 7 lbs. weight.

I, therefore, fearlessly pronounce chloroform a most cruel and painful agent in the stupefaction of bees, and in every way most unsuited to the purpose. I would ten times rather apply the brimstone-match at once. There is nothing superior to the common mouse-skin byssus found in wine-cellars, or the common puff-ball, for all purposes connected with fumigation.

I shall be very glad to hear the past experience of any others on this subject. If it confirm my own, which is certainly somewhat dearly bought, I trust this warning will be the means of preventing any one from subjecting these little favourites to such cruelty.—S. BEVAN FOX, 7, *Southernhay, Exeter*.

TO CORRESPONDENTS.

MOVING GRAFTED CHERRIES (*J. T. S.*).—Cherries grafted this year may be moved as soon as the leaves have fallen.

RED SPIDER (*A Constant Subscriber, M. S. W.*).—The leaves you sent were sadly injured by the red spider, which is so small that one can scarcely see it, even where thousands may be at work. The thrips is a worse enemy than the red spider, because it is more difficult to get rid of. Both do the mischief on the underside of the leaves,—the red spider because the leaf screens it from its natural enemy, the damp. A night or two of heavy dew would kill them out of the country; but, unfortunately, the dew, or rain, cannot reach them. Therefore, when the red spider is dreaded, at the beginning of growth, an imitation of dew, or Scotch mist, to the *underpart* of the leaves, will most completely keep it at bay. But let the red spider once get a head, and it is up-hill work to dislodge him, except by poisoning the air for him with the smell of burnt sulphur. He can neither stand on wet ground, nor sniff the smell of sulphur. The danger is, to amateurs, that the smell of sulphur may be too strong for the plants, for they too must breathe the same air as their enemy. All such remedies should be applied, like liquid manure, in very small continuous doses, till the work is done imperceptibly as it were.

BOUQUETS AND CUT FLOWERS (*W.*).—Mrs. Johnson, of Covent Garden, London, will make you exactly what you want, in the way of bouquets, to open the eyes of any Judges in the provinces. Mrs. Johnson, and two other good women, her next-door neighbours, whose names we regret, at this moment, to have forgotten, will be most happy to send you cut blooms of the finest Asters in the kingdom, and the finest of any other thing in the cut-flower way, either in loose bunches, or made into nosegays of any size, shape, or make, that you may point out. If any one, no matter how far off in Ireland, or Scotland, wishes to see a living flower, of any plant that is on sale in Europe, let him, or her, send to Covent Garden for it; and if expense

is no object, the thing required will not fail to be on the breakfast-table in due time, and at the right moment.

NAMES OF PLANTS (*Rev. Mr. Higgins, Rose Wood, Pangbourne*).—The largest of the two plants sent is the great wild Valerian, *Valeriana officinalis*. The yellow flower is the great yellow Loosestrife, *Lysimachia vulgaris*. (*An Old Subscriber, Hillingdon*).—Your plant growing amongst the Indian Pinks is the *Dianthus superbus*, or the Superb Pink, and is perennial, but ripens seed freely. (*G. R. F., Ribble*).—Yours is the Venetian Sumach, *Rhus cotinus*, a very ornamental hardy shrub upon a lawn.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

SEPTEMBER 8th. LIVERPOOL AND MANCHESTER.

SEPTEMBER 14th and 15th. SPARKENHOE (at Tamworth).

SEPTEMBER 21st and 22nd. BRIDGNORTH. *Sec.*, Mr. Richard Taylor, Bridgnorth. Entries close the 15th of September.

SEPTEMBER 21st and 22nd. LICHFIELD.

SEPTEMBER 26th. PAISLEY. Entries close Sept. 18. *Sec.*, Mr. Wm. Houston, 14, Barr Street.

OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

OCTOBER 13th and 14th. CREWE. *Sec.*, D. Margetts, Crewe. Entries close 30th September.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. *Sees.* R. Teebay, and H. Oakley.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. *Sec.*, Thos. Robinson.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

THE FUTURE OF POULTRY SHOWS.

THERE are intervals between Shows, when, although there may be nothing of great interest before our readers, we find that there are many subjects on which we have a few words to say. Our first Chicken Show at the Crystal Palace is now over, and, in spite of an unfavourable season, bad hatching, and many other drawbacks, yet the display of Chickens showed the progress that has been made of late years, while the number of sold pens proved the unabated anxiety to possess good specimens of the different breeds.

In one class only is there a marked decadence, that is in the Polands. These birds are not without their admirers; but unless they will support the classes, by entering them for competition, Committees will be obliged either to diminish the sums offered for prizes, or to make them contingent on the number of entries. Take, for example, these classes at the Crystal Palace. The sum offered for competition was £21, the entries amounted to twelve, at 6s.—£3 12s. The prizes offered for Dorkings amount to £19 10s., while the entries were 69.

We are not in this, nor in anything else connected with poultry, partisans of any class or breed; but, when our attention is called by subscribers to these things, it is our duty to point them out. Seeing that in most places Committees manage these Exhibitions at their own risk, and that some have been reluctantly abandoned, because they were not self-supporting, we endeavoured to find out the causes, and we believe we are near the truth when we say, that one reason is, that prize lists are adopted without discrimination. Having opportunities of knowing that, in most of those that have been given up, the loss incurred has been from £20 to £30, we see at once, that three classes such as we have named above would account for more than that sum. There appears to be two remedies, either to make the prize money depend on the entries, or to diminish the number of prizes at once; and, where the experience of two or three years has shown the class is a loss, to offer but one or two, instead of three prizes. Another advantage would result from this, it would enable Committees to be still more liberal to those classes that from their numbers would seem to have a claim. Such, for instance, as the Dorkings and Spanish. These latter have no variety of classes. Spanish make but one, and Dorkings but

two, yet they are everywhere among the most numerous. The Game rival them in numbers, but, owing to the distinctions of colour, they have more classes.

We throw out these hints for Committee-men. They should support those which support them, and they should not, when forming their prize-list, think it absolutely necessary to give three prizes in every class, because other Shows do the same. The non-observance of this has been the downfall of many Shows, and has entailed pecuniary loss on men whose exertions deserved a better fate.

The next topic on which we would touch, is the abandonment of poultry by the Royal Agricultural Society of England. There has been only one opinion on this point, that it is an unwise step; and most of those who became subscribers when poultry first formed part of their schedule, have signified their intention to us of resigning their position as members, if the present resolution is carried out. They, however, wait, in the expectation that it will be rescinded. We hope it will. The Exhibition of 1859 will be at Warwick, in the heart of the poultry country, and in the neighbourhood of Birmingham. Amateurs and members should make their voices heard by the Council, and the latter would do well to yield to friendly remonstrance, rather than persevere in an unwise determination, to their certain pecuniary loss.

We have then to remind our readers, that the entries for the Worcester Show close on the 23rd of September. We know no Summer Exhibition that has stronger claims to the support of amateurs than this. It stands on the basis of fair and open dealing, and at once states in its regulations, that "unless the entries amount to £300, independent of sweepstakes, the Show will not be carried out, but, in that case, all entrance money will be immediately returned in full." Any profit will go to the Worcestershire Agricultural Society. We are glad to hear that many north-country exhibitors intend to send, and we hope there will be large entries. Those who were there last year will be likely to go again, for the spacious and lofty square hall, with its single rows of comfortable pens, will be fresh in their memory. As on the tempting *affiches* of some of our places of entertainment, and on the hand-bills of large haberdashers shops, it is stated that "all the novelties of the season are to be found within;" so we tell amateurs, that Worcester has not remained in the background. There is a silver-grey class for Dorkings, and sweepstakes both for Game and Dorking Coeks. We would, in speaking of the Worcester Show, borrow part of the inscription on the Town Hall, and say "*Floreat semper.*"

CINNAMON CANARIES.

IN looking over some numbers of THE COTTAGE GARDENER of this year, I met with a letter, signed "T. Moore, West Street, Fareham, Hants," wherein that gentleman states, that he had tried for seventeen years to breed a cock Cinnamon Canary, but in vain, and that he had never heard of any one having bred such a male bird. Now, I have the pleasure of stating, that, about four years since, a cock Cinnamon Canary was given me by the late Mr. Nutter, of Leamington, and I purchased a hen of the same description. They brought up two highly coloured and very beautiful young ones, both cocks, one of which died, and not knowing the value of the other, I parted with it. It was a fine singer; but I have never been able to procure another.—E. CHINERY, *Metton, Lymington, Hants.*

ATTEMPT TO DOMESTICATE THE WOOD PIGEON.

A CORRESPONDENT of THE COTTAGE GARDENER wishes to know, "whether it is possible to rear the Wood Pigeon in a domestic state, by hatching its eggs under the common Pigeon?" In reply to the inquiry of "A WELSHMAN," I made the attempt for many seasons consecutively during my boyhood, making use of half-bred Pouters, and also of Dragons,—simply as being the best feeders,—for the purpose of foster-parents. The result was, that although a fair proportion of the eggs were hatched, the young Wood Pigeons never lived (in a single instance) beyond the third day of their

existence. Acting under the conviction that the food supplied by the old Wood Pigeons would have been of a far more herbaceous character than that of my domestic Pigeons, I fed the old birds purposely on green Peas and wild seeds, taken directly from the growing plants, during the whole time occupied by incubation, hoping I had discovered the cause leading to my former disappointments, and should now, therefore, obtain a more successful issue ; but it proved otherwise, for the same fate also awaited these nests.

I then applied myself assiduously to rearing birds by hand (as my tame Pigeons refused to feed them), taken from the nests of the wild Wood Pigeons when partially feathered. If pretty well plumed when first taken, I experienced not the slightest difficulty in rearing every bird, and bringing them up, to all appearances, as perfect and as healthy as they would naturally have been, if never interfered with in their native trees. If, however, they came into my possession *before* they were tolerably fledged, invariably distortion of the bones of both legs and wings ensued : even if reared, they remained permanently crippled, and, therefore, very unsightly.

I thus, by carefully "cramming," during one year, raised about a dozen pairs of young ones, all possessing constitutions as robust as could be desired. They moulted to very perfect adult plumage, and remained, by constant kind and attentive treatment, tolerably tame. But my Pigeons cared not to associate with them.

They paired throughout early the following spring, except two odd cocks, that I at once removed altogether, placing my Wood Pigeons alone in two aviaries, of about fifteen feet square, and which had the advantage of many bushes growing in them, having been previously used, for many years, for the purpose of breeding Chinese Golden and Silver Pheasants. They thus escaped any annoyance from Pigeons ; and pieces of old besoms, ling, and small branches from beech trees, were liberally supplied them. The different couples appeared "to pair" very fondly, fed each other, carried about the materials for nesting, but never actually built, nor proceeded to lay. Both morning and evening, their peculiar cooings were incessant ; and, being in the most perfect plumage, at such times they bore a very handsome appearance, the cocks "showing" to their respective mates very similarly to Pigeons.

Finding every effort useless, and some neighbours complaining of "the constant row the birds made every morning, even before it was light, to the prohibition of their morning's nap ;" and, as the complainants evidently were not the personal advocates of early rising, to keep good neighbourhood, I sent them all away. One pair I gave to a gentleman, who possessed an aviary of an unusual construction. It consisted of a piece of ground about eighteen feet square, between two high outbuildings, the back being also a plain wall, perhaps three stories high : the top and front was of netting, gas-tarred, to prevent rotting ; and a larch fir, with well-grown branches, stood somewhat centrally. They had not been there more than a month before they built, on a principal branch, a nest exactly similar to the wild birds, so often to be met with in our woods. They hatched and reared two young ones, each bird taking part in the duties of both incubation and feeding. Before the young ones were quite ready to leave the nest, they built another, within about a yard of the former one ; but, just as the two eggs were laid, the previously hatched Wood Pigeons left their nest. This event seems to have disturbed their family arrangements altogether, for they immediately began to pull away all portions of the nest rendered foul by the nestlings just flown ; and strange to say, notwithstanding abundance of materials for nests lay purposely scattered about for their particular use, they repaired their original one by tearing to pieces the nest just built, and actually letting the eggs fall without the slightest observation on their part. The eggs were of course broken, and at once devoured by the Pheasants that were kept with them. They now again laid, and this time also reared a couple of youngsters. Late in the season, they again brought out a single bird, from a nest of two eggs ; but, singularly enough, this latter proved to be a cripple, similar to those referred to, at the commencement of this narration, as taken when unfledged.

The next year the same result ensued, as to the *last* bird. Two or three pairs were reared the following year, but all in

the originally built nest ; nor did the old birds ever again attempt to build another.

They now took to beating all their young from the tree, and the Pheasants naturally maltreated them even still more upon their alighting near the ground ; so that continued persecution was their daily lot, to which several birds, thus fed, fell victims.

Their end was unfortunate. One night some thieves cut through the network, and killed and took away all the Pheasants, as well as all the Wood Pigeons, save the old cock bird. He was heard cooing most noisily in the morning, although midwinter (a time of year when usually silent) ; and a servant, who went to see what was the matter, frightened the poor bird out of his home, by the very aperture made by the thieves. He flew as well as any wild bird could do, but for many days frequently came back to the top of his late habitation, calling for his lost companions in great distress, although he would *not enter*. He now roosted in an elm tree closely adjoining the aviary, but after about eight or nine days never returned, nor could any further tidings be obtained respecting him.

What I have just written suggests some curious matters for a naturalist's consideration. The reasons to be advanced for such varied results I confess myself unable to assign. The old Wood Pigeons, that reared their young so successfully in complete confinement, were fed on precisely the same description of food as the tame Pigeons I endeavoured to induce to act as foster-parents, yet nothing could be more contrary than the issues. A cripple, being the uniform result of the *last* batch from the Wood Pigeons each season, might possibly arise from a weakened habit of body in the parents just prior to moulting, as being a common occurrence throughout most domesticated creatures (leaving the offspring distorted in the bones, with considerable enlargement of the joints), where the parents want constitution and robust health. It is evident, from whatever cause, that young Wood Pigeons, in their earliest days, require some peculiar nourishment, not afforded by common Pigeons.

The above is the only instance, that I know of, where Wood Pigeons have bred in close confinement ; and it will be seen they will not associate with Pigeons, nor yet *breed in boxes*, being strictly arboreal in their habits.

Years back, I have frequently bred the Stock Dove in confinement, in large aviaries, unmolested by other birds, and in *boxes* provided purposely as nesting places.

The Turtle Dove I have also bred in an aviary, the parents selecting a branch of a wall tree for the purposes of a nest. I have also raised hybrids from the Barbary Dove and the Turtle Dove. Strange to say, these latter birds built repeatedly in a box, but never laid at all.

I have thus jotted down my own experience for the consideration of your correspondent, and now conclude with the suggestion, that, to an amateur, these trials to subdue nature yield much pleasure, but little gain.—EDWARD HEWITT, *Spark Brook, Birmingham.*

OUR LETTER BOX.

PRIZE GAME CHICKENS.—At the Crystal Palace Poultry Show, just passed, I found, from your report, that a W. Bentley, of Scholes, Yorkshire, obtained the third prize for Game chickens (Black-breasted and other Reds). Could you let me know, in your "Answers to Correspondents," whether the pen I speak about, was yellow-legged, or dark-legged ?—THOS. BOTTOMLEY.

[We have no means of ascertaining, nor do we know any one who could give the information. So far as our recollection serves us, and we are almost sure we are right, they were dark-legged, but we could not say whether they were willow or blue. We have little doubt, but we are not positive.]


LONDON MARKETS.—AUGUST 30TH.

POULTRY.

We have only to remark that Grouse are moderately plentiful, but principally from the English moors. Very choice birds make good prices, but inferior ones sell badly.

Each.		Each.	
Large Fowls ...	4s. 6d. to 5s. 0d.	Leverets.....	2s. 0d. to 3s. 6d.
Small ditto.....	3 0 „ 3 6	Grouse.....	2 0 „ 3 9
Chickens.....	2 0 „ 2 6	Pigeons	0 8 „ 0 9
Geese	6 0 „ 6 6	Rabbits	1 3 „ 1 4
Ducks	2 0 „ 3 0	Wild ditto	0 7 „ 0 8

WEEKLY CALENDAR.

Day of Mth	Day of Week.	SEPTEMBER 7—13, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
7	Tu	Anthropofidium paniculatum.	29.848—29.709	75—51	S.W.	.05	23 af 5	33 af 6	sets		2 3	250
8	W	Balsams.	29.561—29.474	69—49	S.W.	.60	25 5	30 6	36 af 6	1	2 23	251
9	Th	Bœckia virgata.	29.589—29.533	73—54	S.W.	.29	27 5	28 6	47 6	2	2 44	252
10	F	Banksia verticillata.	29.692—29.658	74—55	S.W.	.24	28 5	26 6	0 7	3	3 4	253
11	S	Banera humilis.	29.583—29.545	60—43	S.W.	.68	30 5	24 6	16 7	4	3 25	254
12	SUN	15 SUNDAY AFTER TRINITY.	29.735—29.627	72—46	S.W.	.08	31 5	21 6	36 7	5	3 46	255
13	M	Banera rubiafolia.	29.963—29.842	73—46	W.	.05	33 5	19 6	2 8	6	4 7	256

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 68.4° and 46.9°, respectively. The greatest heat, 84°, occurred on the 12th, in 1846; and the lowest cold, 28°, on the 7th, in 1855. During the period 126 days were fine, and on 91 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

THE weather, that is now so favourable for the growth of autumn crops, is also productive of a rapid increase of weeds, where their seeds have been allowed to ripen and fall during the summer. The Dutch hoe is recommended to be scuffled through them on a bright sunshiny day, when they may be either raked up in a cleanly manner or be left to wither on the ground.

CABBAGE.—Plant out the principal spring crop on ground well manured.

CAULIFLOWERS.—Prick out the young plants as soon as they are fit to handle,—some at the foot of a wall or on a sheltered border, and some into frames.

ENDIVE.—Prick out, from the July sowing, on a warm border. Tie up, for blanching, the plants of the early plantation, when they have attained a good size.

LETTUCE.—Make the last sowing for the season of *Brown Cos* and *Hardy Green*, on raised beds of light soil, where they may remain till spring. Prick out some of the *Cabbage* variety into a frame for winter use, and some strong plants of the *Brown Cos*, on a warm border, for autumn use.

PEAS and BEANS.—Exhausted crops should be cleared away as soon as they have done bearing; the ground to be manured, trenched, and planted with other crops.

SPINACH.—Thin the plants to six inches apart; fill up vacancies by transplanting; and if the ground is heavy and poached by footmarks during the operation, it should be carefully stirred or loosened up afresh.

TURNIPS.—Thin and protect from slugs, by frequent sprinkles of soot or lime in the morning.

FRUIT GARDEN.

APPLES and PEARS.—Gather and store on dry days as they ripen; to be handled tenderly, to prevent bruises.

PEACHES and NECTARINES.—As soon as the last fruit is gathered, every tree infested with red spider should be liberally dusted with sulphur when the dew is on the leaves, or syringed previously to the application, that it may adhere.

VINES.—Go over them again, pinch off the laterals, and remove all useless growth.

FLOWER GARDEN.

The beds of flowering plants will require frequent attention, to keep the tall or straggling ones within proper limits, by pinching back or pegging down, and to remove dead flowers and seed-pods, that their blooming may be prolonged until they are destroyed by frost.

AURICULAS.—Protect from bright sunshine and heavy rains. Stir the surface of the soil, and keep them clear of dead leaves and weeds. Search for caterpillars. If green fly is visible in the hearts of the plants, shake a little dry sand amongst them, and blow it out with some force, when they will be driven out with the sand.

BEDDING-OUT STOCK.—Continue to propagate as fast as possible. Cuttings to be potted off as soon as they are rooted, and kept close in a cold frame for a week or ten days, when they should be fully exposed to the sun and night dews, to harden them off for three weeks or a month before they are housed for the winter.

CARNATIONS.—Pot or transplant the layers as soon as they are rooted. Place the potted plants in a close frame for a few days, until they make fresh roots. Use soil of a sandy nature, without much stimulating manure, which is apt to produce a gross habit, that is detrimental to them during winter.

PINKS.—The beds to be kept free from weeds. The old stock plants, that have been grown in pots, to be planted out into borders.

POLYANTHUSES.—Plant out seedlings without delay, that they may get well established before winter.

TULIPS.—The offsets of choice sorts to be planted on a fine dry day.

Tritoma (Kniphofia) uvaria is a hardy herbaceous plant from South Africa, to which we would direct particular attention, being easily cultivated and increased. There are several large plants of it at present in full flower at Kew Gardens, with from forty to fifty spikes of bloom on each. A more brilliant flower is seldom seen: the upper blossoms on each spike are the colour of sealing-wax highly varnished; the lower, yellow and orange; and its brilliancy is dazzling when the sun shines upon it. The spike is roundish-ovate, the flowers sub-sessile and pendulous, very densely arranged in spiral series. There is also a fine specimen of it, with twenty-five large spikes, in full bloom, at Mr. Marsham's nursery, Earles' Court, near Kensington.

WILLIAM KEANE.

KEW GARDENS.—AUGUST 30, 1858.

How much more pleasant it is to write about the progress of improvement, and the steady reformation of character, than to be obliged to record, and to endeavour to rectify, the defects and imperfections of a body of gardeners—say, like that of the Horticultural Society. When I first came to London, in 1829, the smell of Kew was strong enough to manure the land with, and the Horticultural Society was supposed to be in such good heart that their garden could produce everything without any manure at all. For the next ten or twelve years Kew went down, step by step, to the bottom of the social ladder, and the next lowest step was to offer it, like cast-off clothes, to the Horticultural Society, as the Whig Government of that day actually did. I was on the Council of the Society at the time, but I was not sworn to secrecy. My office was behind the scenes, and the best thing I ever did was instantly to let the cat out of the bag in that office. Three Governments went down on account of that “indiscretion,”—the Governments at Kew, at

Chiswick, and at St. Stephen's. The first and last righted themselves in time, and time, which mends all things, will right the Horticultural Society. Time also rewarded me for my trouble; for just fifteen years after that I was called in by Sir W. Hooker, and the Curator, Mr. Smith, to consult about the flower gardening at Kew; and, to my great surprise, I found the greatest and most promising botanist of the age, Dr. Joseph Hooker, to be a regular flower-garden man, after the manner of ladies. He helped me out in some of the suggestions I made, which, I believe, would not have been adopted, were it not for his valuable assistance. I always found fault with the new designs of the flower garden there; but I did not know till then that the design was meant for a very different purpose,—a botanical arrangement of certain families of hardy gay plants; and a very good design it was for that purpose, but not for flower gardening, on any known principle.

The original plans have been altered, as far as it was practicable, along the whole length of the great principal walk, up to the lake, and also on the terrace, and round the large conservatory. But more improvements have been made since this time last year, the best of which is by Mr. Craig, the flower-gardener himself, and consists in cutting four of the worst designed beds that ever disfigured a "plan" right through the middle, and again dividing each of the half-beds into two distinct colours, by which he has effected what I once thought impossible. Next year they will transpose two more beds, to please me,—that is, change the shade of colour in each, or, at least, in one of them, and transplant the plants which are now growing in No. 1 bed to bed No. 2. After that is done, if I live, I shall point to that terrace garden as a model of scientific planting in groups or terrace fashion.

Moreover, in my own defence, I must also state, that several letters and plans passed between Mr. Smith, the Curator, and myself before I would consent to go, and at last I made it a condition that I should be allowed to charge nothing for my talking; therefore, this is to be no precedent, or excuse, for others to call me from my own fancies and experiments to alter and amend their gardens. The whole thing is told plainly as it happened, in order that I may not be considered partial in my review of those gardens, or when I shall refer to them as public models for planting in the most approved styles. In order, also, to show how enthusiasm in a "fancy" will lead away the best of us, I freely own, that I actually invited the flower-gardener at Kew to see the Experimental Garden, and all my plans for recovering the first possession of man.

The next thing I would wish to do, is to put life and common-sense into the botanical collection of herbaceous plants at Kew. I never yet saw anything that way so thoroughly ugly, and so elaborately ill done, and so monstrously expensive to keep, in comparison with the good it is ever likely to effect. Nine out of ten examples of the perfection of the natural system of botany, in all the botanic gardens in Britain, are full of botanical errors from end to end,—the collection at Kew among the rest. Every one of them, also, is on a wrong system; and that may be the reason why botanic arrangements are so repulsive to the natives. We want botany itself to be represented in gardens, not the whims of botanists. One might learn something of botany if botanic gardens were on the representative system, instead of the present plan of "compound fraction" and double "cube root," of which we have already had enough. Instead of a real Michaelmas Daisy to represent the Asters, the head of the largest order of plants on the earth's surface, we have at Kew an endless collection of fractions

called species, where a generic distinction would be sufficiently ample for identity, or for understanding the whole group. Cross-breeders have abundantly proved how baseless and artificial is every botanical arrangement which is founded on specific distinctions, as all plants are planted in botanic gardens.

But let us see and examine the flower garden arrangements. Here we find every bed, and every group of beds, on an improved and fashionable plan. The first thing which attracted my notice, was an avenue right across the botanic arrangement of the herbaceous plants of the old *Kniphofia uvaria*, as they call *Tritoma uvaria*, the most showy of all our old autumnal flowering plants,—a row on each side of the way, in circles on the grass, the circles being from eighteen to twenty inches only; and in that small space no less than seventy spikes of bloom were counted. No one can possibly imagine the splendid show they make. There are four large circular beds of the same plant in the centre of the promenade lines, from the old conservatory up to the lake, which are equally splendid. If these four beds were each edged with a thick row of *Tritonia aurea*, nothing could be more in character, or more richly gay. We might call them, also, on the representative system. The first representing one section of the Lilies, the other that of the Ixia section of Irids,—two great allied families of exquisitely beautiful flowers. Make a memorandum of this, and order six plants of *Tritoma uvaria*,—the better name,—and eighteen bulbs of *Tritonia aurea*. Plant the first in a circle of two feet across, in November,—where it can be seen from the drawing-room,—and keep the bulbs dry till the end of February; then plant them four inches deep round the Tritoma, and next autumn you will have the gayest object in the garden for less than ten shillings. The very last experiment I tried goes to prove that *Tritonia aurea* is four times better out in the borders than in pots: every seed of it should be saved and sown as soon as they are ripe. But it will be the second autumn before their full beauty is displayed. Several roots of it stood out last winter with a single mat over them during the frost, and they were in bloom ten days before those which were dried and kept in-doors. *Tritonia aurea* is, therefore, established as a first-rate autumnal ornament to the flower garden. I said, long since, that it is the thirstiest of all the South African bulbs.

The best flower-bed at Kew, and the best in England, at this moment, is a mass of *Flower of the Day* Geranium, about four feet across, and ever so long, with one row of *Brilliant* all round, and a fourteen-inch edging of *Purple King* Verbena. The newest and most out-of-the-way bed is equally good. It is a large circle, filled with *Flower of the Day*, and edged with one row of the dark purple-bronzed *Perilla*. The latter is sown in February, in heat, just like any other half-hardy annual, and can be kept to any size by trimming.

The best bedding Geranium at Kew is *Punch*, but they had the true sort out of my own hands. They have *Harkaway*, and *Baron Hugel*, but not in sufficient quantities to edge their beds with. They have *Jackson's Variegated Nosegay*, and *Patrick's Seedling*, a poor, dark-flowered *Nosegay*, with a most excellent habit. They have also the oldest *Nosegay*, as at the Crystal Palace. They have *Cerastium tomentosum*, and the variegated Mint, and they make very good use of both. They plant one half variegated Mint, and one half *Mangles' Variegated*, in one edging, and nothing of the kind ever did better. They have *Annette*, the mother of *Bridal King*, and the only aunt of *Countess*.

Robinson's Defiance is still the best scarlet Verbena,

just as we say at the Experimental. It is, however, the best only for beds over four feet across. The best Scarlet for a three-feet wide bed would suit me for the mixed line in front of the *Ne plus ultra* ribbon another season. I do not know which is the very best scarlet dwarf *Verbena*. *Géant des Batailles* is the best dark crimson at Kew, or in England. *Mrs. Holford* is the best white *Verbena* there, and *Purple King* is the best dark purple, and *André* the best red purple *Verbena*. They prefer *Countess of Ellesmere* to *Shrubland Rose*, and in that I differ from them, as far as *Ellesmere* is from *Inverness*. The *Countess* is not worth two raps at ten yards distance, in the way of effect. When you stand near her she is more rich than her rosy rival, but not so gay; but there can never be any rivalry between a good purple flower and a bright rose flower,—it is the white eye which causes the seeming rivalry.

The best bedding *Calceolaria* with them is *Aurea floribunda*, and *amplexicaulis* does better at Kew than I ever saw it elsewhere. I learned that the Princess Mary of Cambridge must be added to the list of great ladies who understand and appreciate the right principles of flower gardening, which is the best bedding news of the season, and the best point for me to add D. BEATON. But I have a whole host of "best," from Kew, for a rainy day.

THE PEAR—ITS HABITS, CULTURE, &c.

ABOVE all the fruits we cultivate, the Pear, perhaps, exceeds them in the various phases it assumes. Who would think that the *Winter Nelis* had sprung from the same origin as the *Jargonelle*? or that there was any particular relationship between the *Catillac* and the *Nelis*? But I suppose we may fairly refer them to one type, although we must rummage amongst the dust of ages to reach the fountain-head. This great variety, or disparity, in habit, of course, leads to various modes of cultivation; and, through ignorance of such facts, or the want of a thorough recognition of them, mainly arises the complaints that continually exist as to their non-fertility, or inadaptability to given situations.

In looking over the bulk of Pears, we find that, in any discussion concerning them, some classification becomes necessary. This classification must, of necessity, refer to both degrees of hardihood and to comparative strength of growth. We have, therefore, the thoroughly hardy, the very tender, and the intermediate; and as to growth, the weak, the gross, and the intermediate. This, of course, does not profess to particularise all the grades of character; for, indeed, it would monopolise half-a-dozen COTTAGE GARDENERS to do so; and would require more practical knowledge than is in any one man's hands.

I may, however, suggest, that to plant any kind in a situation where the average of the seasons is not sufficiently genial is to incur both expense and disappointment. In all cases, therefore, it behoves an amateur, to ascertain the precise amount of hardihood any given kind possesses. But this kind of knowledge is difficult to reach—I had almost said impossible—at present. The nurseryman who sells them has received such excellent accounts of them from foreign correspondents, in whom he thinks he can confide, that he feels justified in introducing them to public notice. And the public must have novelty, or freshness; for, setting aside mere fashion, there can be no progress without patronising novelties. Had it been otherwise, we should not have possessed an Atlantic cable.

And now let me turn to the more practical part of the question,—as to what might be done. This in-

volves the consideration of climate or situation, soils, modes of training, &c.

Climate we cannot command; but we may at least determine the kinds most suitable to that climate. Situation we have more command over, inasmuch as the choice of a high or low level lies frequently in the power of those who are making new gardens, or regulating matters in old ones. Thus, a garden may be on a declivity; the upper portion may be loamy, the lower inclined to an unctuous, or even boggy character. Here we may fairly place our tender Pears at the upper end. Or it may be that a gentleman has purchased some land, and that of varying character, intending to build a homestead. He has, perhaps, fixed on a site for his house; but, as to the garden, he is puzzled in the choice between two or three fields. The worst of it is, that the site of the house rules the whole, or, perhaps, ought to do. Then, the site of the house being fixed and determined on, the approach becomes the next consideration; so that the poor, would-be garden has no sooner got rid of one tyrant than another springs up.

I do not pretend to expect that the cultivation of Pears, Cabbages, &c., should entirely influence the determination of the proprietor; but I believe that a good deal may be done by occasionally conceding half a point with a good grace. Thus, with regard to an approach road, so much does fancy, or taste, differ, that I will affirm, without fear of denial, that if half-a-dozen minds—landscape-gardeners or not—were to design this approach, no two would be exactly alike. This, then, plainly shows that, first principles admitted, how much depends on the colouring of the mind that determines a case of the kind.

Be this as it may, it is not good practice, in my opinion, to take tender Pears too far downhill. I believe that in the majority of seasons they will be found best on fair upland grounds; not, however, perched on the top of a cold hill.

Let us now speak of soil. There can be no doubt but that a good loamy soil is the best—one that is not too coherent in its particles. A very loose soil, however is not well adapted to them; the trees are apt to suffer much in dry periods, and to become a prey to their insect foes, and the fruit also to crack occasionally.

We are told that in Belgium they thrive on a dark and silicious soil, and this is somewhat singular, the sun having so much power. In England, they are not known to succeed well in such soils, as far as I am aware. How this is reconcilable I cannot say; but the fact is, they may prove tolerably successful on any ordinary garden soil, where they do not produce too much spray. Our half-reclaimed boggy soils would assuredly not be eligible: they would produce a raw and immature growth, which would seldom or never ripen.

In referring to the ailments of the Pear, I would preface my remarks by a few observations on over-luxuriant growths. These are the bane of the Pear, which has the power of rambling a long way in quest of food. There needs no manure to account for the extreme coarseness in habit of some Pears: the property alluded to is of itself sufficient to account for this wild habit. And this consideration naturally leads to the idea of root limitation,—a practice long since suggested in these pages, and from which, doubtless, originated the idea of potting fruit trees and the orchard-house. All this is now pretty well understood; but one thing more I must point to, as connected with this part of the subject, viz., root pruning. I was about the first person to recommend this practice, which I have here affirmed before, and which has never been disputed; but be that as it may, although

meeting with strong prejudice for a few years, it ultimately led to annual or biennial transplanting. This, I suppose, the Americans would call going the whole hog. However correct this may be, few ordinary gardeners, through tightness of labour, could entertain the notion; for where a given number of hands are kept through the year, with no power of addition, it is certain that whilst such proceedings are going on some other business must stand still. But root pruning is not such a great matter; indeed a few cuts with the spade, without removing a particle of soil, will sometimes accomplish it. There can, therefore, be no doubt about the efficacy of root pruning, when a Pear tree is too gross, and thereby becomes barren.

Other ailments consist chiefly of a singular blister,—guessing, let us say blister fungus,—whether named correctly by our highest authorities in the world of science I know not, nor whether they do really know it. This pest appears in the shape of little pustules, spread over the leaf, and speedily extends to other portions of the foliage. It seems to derange, if not paralyse, the functions of the tree, when infested with it: about its baneful effects I have no occasion to give a remark. Then we have the maggot within the foliage, in like manner as the Holly-leaf maggot, and also that of Celery. I have seen first-rate trees almost destroyed by it. Then comes the scale, but that is easily subdued. This last generally infests the stem and branches: soft-soap water—four ounces to the gallon,—well brushed in, will go far towards an entire extirpation. There is also a kind of gangrene, or canker, which infests certain kinds: the bark becomes what gardeners term canker. If any one wants to look for it, let him seek for an old *St. Germain's*, a *D'Auch*, or a *Brown Beurré*. Whether it means “I am worn out,” I cannot say, but such is the fact.

As to modes of training, they are hardly worth fighting about,—they may be trained in any form. But if any one chooses to adopt any fancy or fashionable form, I advise him to consider well the effect of that form on the natural habits of the tree.

R. ERRINGTON.

A GOSSIP ABOUT MIGNONETTE.

I WILL endeavour to meet different inquiries in as simple and plain a manner as possible.

First. I presume that “A SUBSCRIBER” has not so much in view the *growing* of Mignonette in winter as the keeping it in health, and only advancing very slowly, so as to have it in bloom in April and May. For this purpose the seeds should be sown in the beginning and middle of August. Plenty of manure and frame room will do but little in the way of growing this plant rapidly; in fact, the application of much of the former, either in the soil, or round or below the frame, so as to cause extra heat, will be a dangerous experiment, so far as success is concerned, as heat from manure will also generate and keep up plenty of damp,—the great enemy of Mignonette in winter.

To have nice pots of Mignonette in April and onwards, pots about five inches in diameter answer very well. These should not merely be rubbed before using, but well scrubbed with hot water, if they had been previously used, so as to get rid of everything that would be likely to generate moulds and fungi. If the pots are new, they would be the better for being steeped in clear water, and used when dry. So much for pots.

The *soil*, as a whole, should be chiefly good fresh loam. This I would divide into two portions,—one enriched with a little, very rotten, sweet cowdung, or well decomposed leaf mould; and, after suitable drain-

age, I would fill the pots nearly half full with this compost, rather less than more. The other part I would fill, within a quarter of an inch of the brim, with the pure undunged loam, the very top being made rather fine, the rest containing pieces of the size of Peas and Mazagan Beans. When this was pressed down, the seeds should be sown over the surface, about a dozen of what are thought to be good seeds, in a pot. Supposing the soil in good working condition, and the seed nice and new, I would now water gently with a fine rose; and as soon as the surface was dryish, which on a fine day it would be in an hour or two, I would cover with the eighth of an inch of rather fine-sifted soil, and press slightly down again with a round, flat board. The pots may then be set where they will have plenty of air, and be protected from fierce sun and heavy rains. As soon as the plants appear, light must be given in plenty, and extra wet guarded against. As soon as they can be freely handled, the plants should be thinned out regularly to six or eight plants in a pot. It is safest to have plenty at first. The surface soil should be broken or stirred with a pointed stick, or the point of a knife, so as to prevent a caked and cracked surface, and to allow air to get into the roots of the tiny plants.

I have hinted that the plants should not be exposed to deluges of rain; and, from the period at which the plants appear, *watering* must form a matter of much importance. As the nights get long in autumn, watering in the afternoon must be dispensed with, so that the tender leaves may be dry at night; and it should be given so soon,—say, nine o'clock in the morning,—that the foliage may be dry before the sun in its strength is likely to shine upon them. All the air possible should be given, until there is danger from frost, by having the sashes fully off in fine weather during the day. At night, and when likely to be changeable, the sashes may remain, but propped up some six or eight inches at back and front. During winter no indiscriminate watering should be thought of. If the waterer cannot be sure of so wielding the can as not to give a drop more than is necessary, and not slushing or spilling any where not wanted, the pots that are dry should be taken out, and only replaced among their neighbours after they had been watered and allowed to drain. Everything in winter should be done to discourage damp and moist exhalations. Although the plants will suffer when the soil is dust dry, the chief mischief generally arises from excess of moisture. The moister the soil and the moister the position, the more liable are the plants to suffer also from frost.

Their *position* in winter,—that is to say, after the end of October,—whatever it may have been previously, is a matter of great importance. Everything like old dung beds and frames should be discarded. The frames of our correspondent will do just as well, if not better than brick-pits, provided the position is all right. That position should be *above* rather than *below* the surrounding ground level. If six or twelve inches above that level, and the bottom, by concreting or otherwise, is made impervious to water rising, it will be a decided advantage. A rough, open bottoming may be given inside, which will facilitate the egress of water from the inside. But, if properly attended to, there will be little water that will want to get out in winter. The frame, thus placed, may have the space inside covered with dry, rough, cindery ashes, or other open material; and upon these the pots should be placed within from six to nine inches of the glass. Unless when frosty, air should be freely given. In warm, damp weather, tilt the sashes, back and front. Anything in the way of hot manure should be sparingly used. The neatest mode of protecting the frames outside would be by a

thickness of six inches of straw, or drawn, dry litter, fastened securely against the wood by rods and string; and so inclined as to throw the rains to a distance from the frames. The next best would be surrounding the frames with a mound of dry earth, or ashes, and thatching them with straw, or litter, to keep them dry. The plants will thus be secure from all injury, except from frost through the glass. It is usual to provide against this by throwing mats and litter over them. Where much is done in this way, wooden shutters make by far the best protection for the glass; and the litter thrown over them in very severe weather has no chance to break the glass when put on or removed. The wooden covers would also be useful for many other purposes, when not needed for such pits and frames.

In cold weather, when it is necessary to have the sashes shut up, the plants will be safest night and day when just two or three degrees above freezing point. In such circumstances we have seen them covered up for a month without any injury. The long night made little more impression on them than a usual night in winter. When shut up at about 40° in cold, frosty weather, the plants will elongate, and damp will be collected. Even if the covering should not be removed, it will be prudent to tilt the back of the sashes a few hours during the middle of the day, to allow all vapour within to escape. If after such dull weather, or if after being long shut up, the sun should suddenly shine out very bright, it is advisable to shade a little, until the plants get used to it. If a degree of frost should get inside your frame, notwithstanding all your care, keep the covering on for several days after the thaw, that the plants may have every chance of recovering themselves, which they would have little chance to do if suddenly exposed to sun and air.

With care, *Mignonette* may thus be kept in fine order over the winter, and the less frost there is the less trouble and forethought will be involved. But, in the hands of a practical gardener, such pits, or frames, or low houses, if heated by a small hot-water pipe, would be a great security against sudden frosts and fungus damps, arising from a stagnant atmosphere. But here again care must be taken that the heat is so moderate as not to unduly heat the pots next to them, or these again will require more care in watering, so as to keep them in an equable state as respects moisture.

Secondly. In relation to "Juno's" inquiry, as to having fresh, sweet-smelling *Mignonette* in March, I would advise sowing with equal care in the middle of July, placing the plants in pits or frames by October, and placing them in the greenhouse by the middle or beginning of November, duly attending with watering, and nipping off every appearance of flower-bud until the middle of January. Four or five plants would be enough in a pot, and, as soon as the flower-buds appeared, weak manure waterings would be an advantage. The *Mignonette* will not bloom freely, nor throw off its fine perfume, if below from 45° to 50°, and this temperature must be kept in view by those who wish for strong and sweet-scented *Mignonette* in the early months.

Thirdly. To have *Mignonette* to bloom all the winter, the seed should be sown in rather larger pots, in the beginning of July or the end of June, and should be thinned out still more freely. More manure may be placed safely in the lower soil of the pot, and by November a little surface-soil should be removed, and a fresh and rich surfacing added. Before the middle of October, all appearance of flower-buds should be nipped away, so as to make the plants stubby and fertile in flowers. The plants should be placed in an airy part of a warmish conservatory by

the middle of October, and watered carefully,—above all guarding against the common error of making a plant at such a time stand in a morass, by watering, when it does not require anything of the kind. The more sun the plants have, other things being equal, the better they will thrive. The water used for such plants, in a flowering state, should always be warmer than the air of the house. For instance, supposing the temperature of such a house, when watered, averages 50°, the water should average from 60° to 70°.

Tree Mignonette.—There is a still more artistic mode of having *Mignonette* in bloom in winter and spring, and that from single plants. Thus, place several seeds in small 60-pots, in a mild hotbed in the beginning of April. Thin these to one as soon as you see which will be the best. Place a small twig beside it to sustain the main shoot. Tie that up the whole length, and make up your mind whether you are to have a standard, with a mop-like head and a clean stem, or a pyramidal bush, clothed from top to bottom with leaves and flowers. Shift into larger pots as the state of the roots require it, and nip off all blooms until the end of autumn. These, favoured with a temperature of from 45° to 50° and onwards, will prove very agreeable objects in the winter time.

Many, to escape the trouble and the annoyance of sowing in August, and protecting over the winter, so as to furnish balconies, &c., early in May, sow in the same manner in March, and place the pots in a briskish hotbed, formed of dung and leaves, good leaves alone, well worked tan, refuse from the flax mill, or discarded hops from a brewery. Such plants are thinned, exposed by degrees, get more and more air, but are seldom fully exposed until the plants are getting into a free blooming state, which they do little, if anything, behind those sown in August. It is right to add, that the hotbed is not made and attended to without trouble, and, even when that trouble is given, sometimes extra heat and unwholesome steam will destroy a fine batch of plants in a few hours. All is not clear gain then, though time be gained; but where the means exist, and are properly managed, this mode involves least trouble.

Healthy *Mignonette* in the open air is obtained from sowings in May, June, and the first days of July.
R. FISH.

FLOWER-GARDENING AT PUTTERIDGE BURY.

HAPPENING lately to be on a visit to a friend in Hertfordshire, I availed myself of the opportunity of calling at Putteridge Bury, the country seat of Colonel Sowerby, and from where Mr. Fish writes those admirable treatises on plant growing and flower-gardening, which form so prominent a feature in *THE COTTAGE GARDENER*. The situation of the mansion and grounds is on one of those elevated ridges which give that undulating character to the western edge of Herts, and the adjoining county of Beds. The neighbouring district is purely agricultural, excepting that the plaiting of straw and its manufacture into ladies bonnets affords much employment to the female members of the rural population, as well as to the rising town of Luton, which is but a short distance off.

And, if it be mentioned that the surrounding district is remarkable for the production of good Barley, and tolerably good Wheat, some sort of knowledge may be formed of the soil Mr. Fish has to deal with,—chalk being predominant in all directions around, and its concomitant evil, an absence of water to a great extent.

On entering the kitchen garden (which is usually the first object a gardener visits), the impression left

on the mind would be, that the flower garden must be very small, the quantity of glass affording but little room to winter any great number of plants; and, judging from the quality of the Grapes in use, as well as those for the winter supply, it would lead many to suppose that the interests of these fruits forbade the intrusion of plants of any kind amongst them, and so it would in times gone by. But Mr. Fish is one of those who know the full value of economising space; and, even to those who pride themselves on being able to make the most of small means, the contrivances here adopted, to winter and propagate the large number of flowering plants wanted for the flower garden, must be a matter of astonishment, as every inch of glass, turf pits without glass, and shelter of all kinds, is put in requisition in winter and spring, to furnish the requisite number of plants wanted to fill the numerous beds and striped borders of the flower garden. The number of glass structures Mr. Fish has being small, and these mostly occupied in a permanent measure by something different from the ordinary class of bedding plants, the greater credit is due to Mr. Fish for being able to fill his beds in the efficient manner in which they are done; for, although I have had an opportunity of seeing some of the most extensive flower gardens in the country, I have not met with any so well done in detail as that of Putteridge Bury; neither have I seen any where so much variety exists. Many of the largest flower gardens, like, for instance, that of the Crystal Palace, content themselves with some few plants of very distinct colours and habits, and disregard all others; Mr. Fish, on the contrary, makes an inclusive collection, and yet all is done so well, and so blended as to form a pleasing feature on the whole. But to the details.

At a little distance from the mansion, a conservatory wall separates the kitchen garden from the pleasure grounds. Against this wall was planted many of the hard-wooded plants, which ornament our greenhouses and conservatories, as Acacias, Ceanothus, and various other plants, interspersed with Tea and other tender Roses, which seemed to flower admirably. Parallel with this wall, and at the distance of a few feet, runs a walk of a beautiful white gravel, almost like the crushed spar found in Derbyshire and elsewhere; over this walk, at intervals, was thrown ornamental arches of iron-work, which communicated with the wall. These arches were partly clothed, not covered, with creepers of various kinds, their artistic character forbidding their being entirely hid. While on both sides of this straight walk was one of those beautiful striped borders, which Mr. Fish was amongst the first to introduce; and, as the planting of such borders has of late been a subject of much comment, I will here-with give a few notes thereon.

The walk being a straight one, and only about twelve feet from the wall, two feet of that space was appropriated as a grass verge next the walk, and about seven feet devoted to the striped, or ribbon border, leaving about three feet next the wall as a sort of back path. The length might be about 400 or 500 feet, or more, and a border on each side. The outer one opening to the lawn was faced both ways. But, to break the monotony of the uniform ridge of fine and compact flowers, a series of pillars eight or ten feet high was set along the centre, and double that distance apart. These were festooned together, and fast-growing creepers—as *Convolvulus*, *Maurandya*, various *Tropæolums*, and other things—were trained against them with good effect, and to every one, except to Mr. Fish himself, the planting and flowering of the borders must have seemed perfection itself. Though I have seen a great deal of that description of

ornamental planting, I have not seen anything to equal it for the density of its flowering and general display. The arrangement of these borders will be best understood by the following description.

BORDER NEXT THE WALL FACING THE WALK.

First row—*Geranium*, *Golden Chain*.

Second row—*Lobelia speciosa*, mixed with *Cineraria amelloides*.

Third row—*Geranium*, *Brillante*.

Fourth row—*Verbena*, *Mrs. Holford* (white).

Fifth row—*Geranium*, *Trentham Rose*.

Sixth row—*Calceolaria amplexicaulis*.

Seventh row—*Dahlia*, *Zelinda* (dwarf purple).

The above were all beautifully in flower, close, compact, and even in every part; and, to one less particular than Mr. Fish, it appeared faultless; but Mr. Fish thought the *Lobelia* did not look so well in the afternoon as it ought to do. A partial closing-up of its florets was to him a defect, which he purposed to remedy by substituting something else another year. It is the care and nicety carried out in matters of detail such as this that has brought flower-gardening to such perfection in places like Putteridge Bury; and, I believe, Mr. Fish will be altering the arrangement again another year.

BORDER ON THE OPPOSITE SIDE OF THE ABOVE AND FACING BOTH WAYS.

First row—*Geranium*, *Golden Chain*.

Second row—*Lobelia speciosa*, and *Cineraria amelloides*, mixed.

Third row—*Geranium*, *Brillante*.

Fourth row—*Verbena* (a white variety).

Fifth row—*Geranium*, *Trentham Rose*, which formed the centre or ridge of the border.

Sixth row—*Verbena* (white variety).

Seventh row—*Geranium*, *Brillante*.

Eighth row—*Lobelia speciosa*, &c. (same as No. 2).

Ninth row—*Geranium*, *Golden Chain* (same as No. 1).

In the above arrangement I did not observe a single defective plant,—every one seemed to occupy its allotted space without intruding on its neighbour. The rows being clearly defined and distinct, and rising gradually from each side to the middle row (No. 5), formed a low ridge, perfect and uniform. The pillars festooned together, before alluded to, being in the centre line (No. 5), the whole looked remarkably well,—better than anything of the kind that I have ever seen before or since, although I have had an opportunity of seeing, I might say, some miles of this description of ornamental flower-gardening, which was certainly not the only thing to be admired at this place, as the general mass of flower-beds were equally well planted and attended to.

A series of circular beds, in a double line, with an open glade in the centre, were also beautifully arranged. The beds being about equal in size, and from twelve to eighteen feet in diameter or more, were mostly planted with one distinctive plant as a body, and a rim of something else around the outside. A bed of Scarlet *Geraniums* had an edging of variegated *Alyssum* around it, and, what was perhaps the most important of anything, a single specimen plant of four feet high or so in the centre,—the beautiful *Cassia corymbosa* being much used that way, and often amongst the Scarlet *Geranium*. Other beds of purple *Petunia* had an edging of some variegated *Geranium*, and perhaps a plant of white *Brugmansia*, of which Mr. Fish has an excellent variety. *Fuchsias* are also used extensively as central prominent plants, and *Erythrina christa-galli* was also used,—the plants most proper for this being such as require but little support in the way of stakes, and yet endure the winds,

and flower well. Edging plants were in most cases light-coloured, compact-growing ones, or such as were made to be so. Nevertheless, blue was occasionally used; but its contrast with the turf was not so good as the variegated Alyssum, and other plants that way. One bed I noticed, being edged with *Cerastium tomentosum*, looked very well, though not better than the *Cineraria maritima*, which was also extensively used as an edging, or for striped purposes; but I only noted down a few examples. One was a circular bed of *Calceolaria amplexicaulis*, with an edging of purple Senecio; another of Heliotrope and Sarah Verbena (a Rose-striped variety), edged with *Gazania uniflora*, a white-leaved, yellow-flowered plant, not so much used as it deserves. A Rose-coloured Geranium was edged with an upright-growing, blue-flowering *Verbena*. Scarlet Geraniums were edged many ways, but none looked better than that with *Cineraria maritima*, and some variegated Geraniums were extensively used as edging plants.

Near to the mansion, and facing it on one side, was a sunken panel of about 150 or 200 feet square, and depressed about four feet or more. This area was divided into an arrangement of beds of simple figures, which were all planted with low-growing plants, of which Mr. Fish had enlisted all the known kinds into his service, and the colours were so blended as to give a pleasing feature to the whole. Yet it must be confessed that this feature in the garden was of necessity somewhat confused, owing to the beds occupying so much space as to leave but little room between them, there being, I believe, about 80 beds in this compartment. But adjoining the grass terrace, which surrounded it on two sides, was another beautiful ribbon border, forming the outer boundary to the terrace on the two sides. It was composed of different plants from the one mentioned above, it being designed to be viewed at a distance, and was planted as follows:—

First row near grass terrace—Geranium, *Brillante*.

Second row—*Calceolaria rugosa* (yellow).

Third row—Dahlia, *Zelinda* (dwarf purple).

Fourth row—Pentstemon (white)

Fifth row—*Salvia fulgens*.

This border looked well, in spite of some imperfection in the line of *Calceolaria*. The Dahlia also looked very well, while the Pentstemon and *Salvia* overtopped it; and, being mostly viewed from an oblique direction, the whole had a good effect. Other beds in the grounds were occupied by plants of a more permanent character, as an edging of Ivy, with an inner lining of *Cineraria maritima* and mixed plants; while distant borders were bristling with Hollyhocks and Dahlias, and Roses were grouped in various directions. The grounds being slightly undulating gave scope for various arrangements, and all reflect great credit on Mr. Fish's management.

In a chalky soil, like the one here, it is needless to say that everything could not thrive alike well, and one which seemed to fail, as well as in other places, was the *Calceolaria*, which, with the exception of the *amplexicaulis* variety, was less satisfactory than other things. But Mr. Fish had not depended on these for his ribbon beds, except the *C. amplexicaulis*, which did very well. It is somewhat unfortunate, but nevertheless true, that the hitherto useful varieties of this plant, as *C. viscosissima*, *Aurea floribunda*, and all the shrubby and half shrubby kinds,—both yellow, dark, and mixed-coloured,—are failing very much all over the country. Mr. Fish thinks of trying the oldest species again, *C. angustifolia*; with what success will, no doubt, be duly reported in THE COTTAGE GARDENER.

Having drawn this article to a greater length than I intended, it is only just to say, that the Grape-

houses, conservatory, kitchen garden, and other departments, were equally as well managed as the flower garden, and each deserving a separate notice; only as the flower garden at the present season (August) is the most prominent feature in most places, I make no apology for describing what is done at Putteridge Bury, excepting so far as my narrative falls short of conveying the real merits of the place. J. ROBSON.

THE MIRABELLE PLUM.

A FEW years ago, when in France, I was much struck with the great quantities of this Plum cultivated by the French gardeners, and I remember particularly being told by the royal gardener at Versailles, that it was a great favourite with Louis Philippe and family, and that it was used solely for *compotes* and preserves. I soon after planted a row of trees, bushes, and pyramids, and now have the pleasure of seeing them full of their pretty fruit, which are oval, about the size of Damsons, and of a bright yellow, spotted with red. My trees have been lifted biennially in November, and replanted in the same places, so that they are compact, and most ornamental. I am really loath to gather the fruit.

This sort must not be confounded with Mirabolan or Cherry Plum. It is called in France *Mirabelle petite*, and *Mirabelle de Metz*, where it is cultivated to a great extent. It is most delicious when cooked, either in tarts, *compotes*, or puddings, and makes a fine preserve, with or without sugar.

In deep, rich soils it forms a small tree, if left to make its full growth; but it makes a nicer garden tree if removed biennially, for then it will not occupy a larger space in the garden than a good-sized Gooseberry bush.—PRUNUS.

PEARS IN LANCASHIRE.

BEING a Lancashire man, I read with much interest the letter of your correspondent on Lancashire Pear growing. But far more may be done in Lancashire, in the way of Pears, than your correspondent gives your readers reason to suppose. He does not even mention the *Winter Nelis*, which is second only to the *Marie Louise*; and the *Crassane* and *Aston Town* are excellent, especially the latter, either with or without a wall. I hope before long to send you a list of really good Pears from Lancashire.—W. C.

HORTICULTURAL SOCIETY'S GARDENS, CHISWICK.

[To refute "CENSOR," who says, we "are not sustained in our condemnation of the mode of a late appointment;" and for the information of "H. W.," who asserts that "Mr. Archibald Henderson is a man of very superior qualifications," we insert the following from the *Scottish Gardener*, adding that we have given no opinion upon Mr. Henderson's qualifications. What we condemned, and still condemn, is the appointment of a successor to Mr. McEwen, without asking competitors to come forward. It was an underground mode of proceeding, savouring of the old days of misrule; and, we hear, that it was firmly opposed by two members of the Council, whose opinions ought to have made the Council pursue a different course.—Eds. C. G.]

"Some two years ago, as our readers are aware, an extraordinary effort was made to restore the London Horticultural Society and its gardens from the disgraceful plight into which they had fallen through extravagance and mismanagement. It was decided upon, as one great indispensable, to secure the services of a horticulturist of extensive practice and acknowledged and proved abilities, combined with conciliatory and gentlemanly manners, and of good education. Accordingly such a person was advertised for repeatedly, in the columns of the *Gardeners' Chronicle*, the salary offered being £150 a-year. No one came forward who was considered suitable for so onerous and important a task as that which, after so much stir had been made, the country expected to be accomplished

within the mismanaged precincts of Chiswick. The late Mr. George McEwen, then at Bretton Hall, was pointed to by all as combining in a very large degree the qualifications and energy befitting an undertaking so important. The situation was at last offered to him, and he accepted it at a salary of £250 a-year. No doubt the Council thought it wise and economical to secure the services of such a man at £100 a-year more than was originally offered; and the appointment gave entire satisfaction to all who knew Mr. McEwen, as a gentleman and a gardener. What Mr. McEwen effected in so short a time, and under circumstances the most adverse, it is not our present purpose to tell—the columns of the *Gardeners' Chronicle* have made that public enough.

"The ruthless hand of death having lately taken from our midst the highly-respected and now lamented gentleman to whom we have referred—thereby causing a great loss to the gardening world at large, and leaving an important post to fill up at the Chiswick Gardens—as a matter of course, all who wish well to the progress of horticulture as a science, and who desire to see the Horticultural Society's Gardens take their proper and professed position, have been more or less anxious and interested as to who was to be appointed Superintendent in succession to so accomplished a horticulturist and intelligent a man as the one who had begun a new era of Horticultural Societies, and had done so much in one short twelve-month or little more. And, of course, too, the Council of the Horticultural Society have, or ought to have been anxious and interested to a still more intense degree in this matter. For ourselves, we expected an advertisement for a Superintendent in the columns of the *Gardeners' Chronicle*, always the ready mouthpiece of the proceedings of the Horticultural Society. But that journal maintained a sullen silence till the 10th of July; and we know for a fact that that seeming delay of action was being felt with a painful degree of interest and impatience by a great number of the Fellows of the Society. The notice at last came, barely announcing that a Mr. Archibald Henderson had been appointed Superintendent of the Gardens; and one wonder then took the place of another. All that we meet with ask, Who is this Mr. A. H., and what are his antecedents and qualifications for such a position? The question is natural and proper.

"The public may or may not believe in the appointment of a man never before heard of in the field of horticulture; but if it were of the utmost importance eighteen months ago to secure the services of a horticulturist of first-rate and proved abilities—one in whom the country had confidence—it must be so still; and if it is otherwise, better let the Society's Gardens cease to exist altogether. And really, after the parade recently made in the *Gardeners' Chronicle* of the absolute necessity of a high education for gardeners, one was led to expect that that feeling ran deep in the South, and that the person appointed to rule the destinies of gardening at Chiswick, and set an example of cultivation, &c., to a nation, would have been hooted down by the journal in question if he were not at least up to the average range of literary accomplishments among the operatives of the profession. And if the person appointed is lacking in this elementary particular, we hesitate not to express again our gravest doubts as to the wisdom of the appointment, and the effects that it will have. In conclusion, we call upon all who contribute their money to the support of the Horticultural Society, to investigate this matter, and see whether the grounds of our doubts are real or not.

"[We publish the above as coming from an esteemed correspondent—a man of integrity and earnestness of purpose—who, we presume, has some knowledge of the facts to which he adverts. He is not a disappointed candidate, as some may be tempted to suppose, and he is only asking questions, most of which are being put through the length and breadth of the land. For ourselves, we know nothing of the appointment in question beyond what is patent to the world. Of course it is due to every young man that he should have a fair trial. Probably the new gardener at the Chiswick Experimental Garden is not more inexperienced, or unpromising, than Sir J. Paxton was, when he went to Chatsworth; or as various other horticultural notabilities were in their first important step in life. Perhaps the appointment in question indicates another change of system in the London Horticultural Society. It has been whispered that the late Mr. McEwen, with all his

virtues, did not prove very manageable by the Council—he was too spirited, and came with too high a prestige for that. It will be remembered that the first head-gardener at the Horticultural Society's Garden—the late Mr. D. Monroe, a very worthy, quiet man—was little more than a mere nominal official. The late Joseph Sabine, Esq., was the real gardener, and Dr. Lindley was his foreman. Besides that, Mr. Sabine, as being unpaid Secretary, and devoting most of his time to the work, was Viceroy over the Society, according to the old formula, 'You shall be King, and I shall be Viceroy over you.' It was under that *régime* that the Society sunk into that abyss of debt from which it has not yet emerged, and probably never will. Such gardeners 'wear their Rue with a difference;' they have the blue apron trimmed with white satin; and they must have their own will and way. We should think that the present unpaid Secretary, with his many merited honours, and with his manifold and important occupations, would be above such things. We shall see. Meanwhile, supposing that our correspondent has some grounds for his animadversions, we shall be curious to observe the tone assumed by our horticultural contemporaries in the South. Will they venture to speak out? Perhaps not.—ED. *Scottish Gardener*.]"

CEANOTHUS AZUREUS.

THIS handsome flowering shrub deserves more attention than it often gets, as few plants can equal it for profuse blooming, and free and rapid growth. As a covering for a wall, I know of nothing more suitable, and, as a shrub, it flowers when flowers are scarce. But it is in a new character that I desire to call attention to it, and that is for the flower garden. As tall ornamental plants are often much wanted to give effect to the *parterre*, or to act as prominent objects in some straight line, the number of flowering plants suitable for training in an upright form is far from meeting the wants of the times; blue-flowering ones, especially, are scarce. I, therefore, advise this plant being so used, as it blooms most profusely in a pot, with the roots allowed to run through the bottom; and with the assistance of a single stake may be kept in an upright orderly position. I, in consequence, call the attention of our flower-gardening friends to it.

At this place it blooms beautifully against a wall in July, August, and September. Last year some spare plants standing about flowered equally well, so that I had determined to plant some in the flower-beds, but had occasion to plant them against a wall during the winter. Another season I hope that others will also try it. It is proper here to remark, that there is a spurious variety of it got abroad, of a dull grey or lead colour, while the true *C. azureus* is a bright sky-blue, the florets quite shining. It is a somewhat curious fact, that *C. papillosus* flowers most abundantly here (Linton Park), while *C. dentatus* has scarcely ever a bloom upon it, although it continues to grow vigorously; yet its deep green foliage atones, in some respects, for the absence of flowers, especially in positions not otherwise favoured.—J. ROBSON.

HARDINESS OF SEEDS AND SEEDLINGS.

MUCH has been written, at different times, on this subject by men of scientific attainments, who have studied the whole system of germination. And I am led to suppose nurserymen, in many instances, when forming their annual catalogues, do not, from practical tests, state when such and such annuals are hardy or otherwise, but derive their information more from the statements of others, where and in what temperature the seed was ripened in.

We will take, as an example, the Balsam, the seeds of which are generally ripened under glass, in a higher temperature than we are accustomed to in this country; consequently, we infer this is a tender annual, requiring heat and extra care in its earlier stages of existence, to cause a proper development of the plants in its infant progress. Now, I am doubtful whether, in many instances, we are not, to an extent, injuring the young plant, by giving it too strong a stimulus, in the shape of heat and tender nursing. This opinion is backed with facts palpably evident this season,

Seed of the Ice-plant (*Mesembryanthemum crystallinum*) is vegetated out of doors without any care at all, and at present the plants are growing more sturdy and robust than if they had been sown in heat. This is not a solitary case. Vegetable Marrow, Cucumber, Balsam, and others, are continually springing up at this place, thus showing that we pay far too much attention to such things, with regard to vegetating them, than one-half of the annuals at present grown, called tender, half-hardy, &c., require. A great portion of these things would vegetate freely out of doors, causing no annoyance with "damping off," and all the ill young seedlings are exposed to, through injudicious watering, giving air, &c.

Of course, these few remarks are not intended for the practical gardener, who has plenty of means at command to obviate all these evils, but more for the amateur, who we often see rushing into print, complaining that such and such things, after vegetating, had "damped off." No doubt had they been left to themselves out of doors, in a sheltered spot, no complaints of this nature would be so often seen in print. Neither would the nurseryman have blame attributed to him for the seed he vends.—JOHN EDLINGTON, *Winch House, Seacombe, Cheshire.*

HOES.—LABELS FOR AN ARBORETUM.

IN answer to an inquiry relative to the best form for the hoe, we have to reply to our querist (*L. S.*) that, with regard to the size of the blade, that must depend upon the work to be done, and varies from one inch, for thinning seedlings, to nine inches, for hoeing between and earthing-up the Cabbage. When the blade is more than three inches, it should be made exactly like a stirrup, to prevent wet earth sticking to it, and encumbering the operator. They should *all* be crane-necked, whether one-handed, or to be used with two hands; for this shape,—practise pointed out to Mr. Barnes, of Bickton Gardens, the inventor,—enables them to be used with the least difficulty among growing crops. They should all be fixed to the handle by a socket, for this is not liable to become loose. The accompanying sketch is of a small one-hand hoe.



To the query of "CANTUM," "Which has been proved to be the best label for an arboretum?" we confess our inability to give a decisive reply. If we were about to prepare such labels, we should have them of galvanised iron, and write upon them with black paint, by means of a small camel's-hair artist's brush. These would be very cheap, very neat, and very durable. We should have each label of the shape of the letter T, with the shank very long, for the purpose of being thrust into the ground at the base of a tree, or bent into a hook form, to hang upon a branch, accordingly as the growth and habit of the tree rendered desirable.

A much more expensive label is used in the Derby Arboretum. It is made of very hard earthenware, and faced, where the name is written, with a lighter-coloured and finer kind of the same material. The writing on it is inscribed while the label is soft, and it is then burned in the kiln. It is stated to be a very durable, and not brittle, label. Its price is fifteenpence. It is represented in the annexed drawing.



BREEDING GLOWWORMS.

IN your number of 27th July, I see a correspondent, "C. M. M.," is desirous of breeding glowworms, and as you said you would be glad of information, I can give you a little, although, I confess, not much.

I, too, have endeavoured to breed them, but have always failed in keeping them alive in confinement, while I have succeeded by placing the insects on a rockery, amongst Ferns and Mosses, and letting them take their chance. This last month I brought about a score of females, and three or four males, besides a quantity of eggs, which the former had deposited on some Moss, into this neighbourhood, from Hertfordshire, and I have placed them all in a bed of Lilies of the Valley, where I have no doubt of their succeeding, from former experience, and I shall be happy to let your correspondent know the result.—T. C. H., *Sapcote, Leicestershire.* [Pray do.]

THE "ILLUSTRATED BOUQUET."

THE fourth part of this beautiful work has just appeared, and may be had of the principal nurserymen and seedsmen, and of the principal booksellers throughout the kingdom. It is published by the Messrs. Henderson, of the Wellington Road Nursery, St. John's Wood, London. For thirty long years I have been in the habit of running over the illustrated periodicals in botany and gardening, with ladies and gentlemen in all parts of the country, and I ought to know their wants and wishes, as well as any gardener whatsoever; but the best proof of the fact, that the said periodicals were not just the thing for the age, is, that every one of them except the oldest, or grandmamma, the "Botanical Magazine," died out from sheer starvation. Anything on popular botany, so to speak, would go down. But the managers of the magazines could not perceive that they persisted in publishing their weeds and wormwood in the jargon of their craft, which is so repulsive to the taste of the age, that at last no one would take in their books or read them. Dr. Lindley wrote a book on purpose for the ladies to learn botany, and a very good book it was. But it would not do, for he, and all like him, were too proud to write common-sense, and too ignorant of common things, to illustrate, or explain, and teach, about popular plants, bedding plants, florists' plants, fine-leaved plants, sweet-scented plants, plants to put nosegays from, plants to put on the breakfast and dinner-tables, or for decorating the rooms, and all common and most useful plants for the common use of everyday purpose; and, to crown the whole, their dog Latin was unintelligible, and that finished them.

The "Illustrated Bouquet," or pictured nosegay, which is the same thing, ought to be seen by everyone who is fond of flowers. First, in the shops of the principal nurserymen and seedsmen throughout the kingdom, to see how he, or she, or they, may like it, and also to think over it, if they can afford to take it in quarterly as it comes out, and become subscribers, which is the cheapest way by three shillings a quarter. Everybody in Surbiton, and all round this part of the country, may see it at the Messrs. Jackson, of Kingston, and so in all parts of the three kingdoms; and if there is one lady in all these places who would not like to have it on her table, she is to be pitied. Young ladies are sure to have it in their marriage settlement, as soon as they make up their minds. I will tell them what is in this fourth part, which begins with Plate XVI., on which six kinds of variegated leaves are represented, and a branch of a hanging-basket plant, in the style of Achimenes, called *Coccocypselum repens*, with clusters of deep indigo-blue berries. The plants and their management are there described, after an eulogy on variegated fine-leaved plants, which have for some time attracted the attention of cultivators. That time is just twenty years last May, and this is the first nosegay we have had of such plants; but I can supply the history of this attraction to the very letter.

The first of such plants were exhibited by a Frenchman, of the name of Deschamps, before the Horticultural Society, in Regent Street, in July, 1836. They made a wonderful sensation among the visitors. I was one of them, and took the hint. For the next two years, I was in the constant habit of unpacking rare plants from foreign parts; and I made a point of taking some of the most curious of them, whether dead or

alive, in bloom or not in bloom, to the meetings in Regent Street. The wonderful sensation was rising like the garden thermometer in fine weather, till I could perceive the thing was ripe for a "go in, heads and tails." That May I exhibited a whole tentful of curious, variegated, and fine-leaved plants, at the Chiswick Gardens, not one of them in bloom, though the number exceeded 400 plants. That was the best lot I ever made, and, although the Society looked black at me, for stealing a march on their own slow and timid progress, I have lived to see the thing in universal esteem, and to write about the first "Illustrated Bouquet" of plants, without flowers, which you may see as I have just stated.

Plate XVII. is occupied with *Gordonia citriodora*, which I spoke of last spring, from the Wellington Road Nursery. So please look back to that account, and I shall proceed to Plate XVIII., on which are two heads of the most beautiful Rhododendron I ever saw in print or bush. It is a Belgian cross, which beats all the Indians: the name is *Bylsianum*, after the Messrs. Byls, Brothers, nurserymen, of Ghent, Belgium, the parties who have been the fortunate raisers. This most splendid Rhododendron blooms late, after our frosts are over. The flowers are well formed, of a pure white ground colour, beautifully diversified with a rich rosy-carmine border or belt.

Plate XIX. is filled with a Bhotan Rhododendron, named *Calophyllum*, a greenhouse kind, with a large, white, sweet-scented flower. The style of growth resembles that of *R. Maddeni*; and that style is just like the style of *Ponticum*, the best style for a Rhododendron.

Plate XX. represents five kinds of the best new shrubby Calceolarias, with large flowers,—a distinct section, between the herbaceous Calceolarias and the common bedding kinds. The names are—*General Outram*, *Lord Raglan*, *General Havelock*, *Queen of Oude*, and *Lady Palmerston*. This class is by far the best for pot culture, to hold out all through the season; and in small places, where everything is in first-rate style, they will be the favourite bedders. But in large places, where the colours are seen at long distances, the small, clear, yellow Calceolarias alone are applicable. There is a great deal of writing, and useful information, besides these pictures, and the drawings are exquisitely done, and coloured to nature.—D. BEATON.

PALMS FOR THE GREENHOUSE AND CONSERVATORY.

No class of plants are more worthy of attention than the noble and extensive tribe of Palms, with their varied forms of growth, and graceful evergreen foliage, always lively and associated with tropical appearances. It is a general, but mistaken idea, that they are only adapted for large establishments, where a house is devoted especially to their cultivation. It is true that they, like most other tribes of plants, thrive best under such treatment, but they are equally suited for the adornment of a small greenhouse or large conservatory.

No class of plants are more easy of management than they, and none more pleasing, when properly managed. Not only their magnificent appearance, but the history in connection with them, make them doubly interesting.

Nearly every species produces some important article well known in commerce, among the comforts of ourselves, as well as of the natives of tropical regions. These productions are indicated by their popular names—as Oil Palm, Cocoa-nut Palm, Date Palm, Cabbage Palm, &c.

A few remarks upon their culture, with a short description of a select few, will, I trust, be found useful in assisting the amateur, as they are equally adapted for him as for the more experienced cultivator.

The soil best adapted for their cultivation is three parts good yellow loam and one part well decayed manure, with a little sharp sand,—care being taken to use plenty of drainage, nothing being more injurious than stagnant water around their roots. The same remarks are applicable to nearly every tribe of plants. It is better to give water more frequently, than to allow it to become stagnant in the pots; for stagnant moisture is certain to sour the soil, and to encourage worms. There is no better indicator of a plant's prosperity, than to find it readily absorb the moisture which is regularly supplied. If I find

water standing upon the surface of a pot a few minutes after being supplied, I am at once apprised that the drainage is imperfect, when immediate attention must be given in removing and replacing the drainage; otherwise sickness or death to the plant will be the certain result.

Although the Palm is connected in our minds with a tropical region, and its towering height of more than one hundred feet, even the tallest may be kept dwarfed for a long time, by being confined in small pots. Out of from more than one hundred and thirty known species, I have selected a few best adapted for general cultivation, and the exclusion of such noble objects as the Cocoa Nut Palm (*Cocos nucifera*), which is found very difficult of cultivation, even under the most favourable circumstances. The following will do well where a regular temperature of from 50° to 70° of heat can be secured, and they amply reward the cultivator for the little labour they demand.

CHAMÆDorea ERNESTI AUGUSTI, C. GRACILIS, C. ELEGANS, C. ELATIOR, and C. DESMONCOIDES.—Cane-like Palms, with polished trunks and pinnate-sect leaves; diœcious flowers (that is, producing male and female flowers on separate plants); fruit a bright red berry, produced freely, which has a very ornamental appearance.

CHAMÆROPS EXCELSA, C. HUMILIS, C. PALMETTO, and C. SERRULATA.—Dwarf Fan Palms, all well adapted for culture in the low temperature of our greenhouses and conservatories. *C. excelsa* is supposed to be quite hardy out of doors in this country.

CEROXYLON ANDICOLA.—The Wax Palm of the Andes, so named on account of its stem being covered with a coating of wax, which is scraped off by the natives of Paramo of Quindui, and mixed with tallow, to form candles. It is a tree of slender growth, with graceful pinnate-sect leaves.

BACTRIS.—This genera contains about forty species, all of which are well adapted for general cultivation, being of low stature, and, unlike most Palms, clothed with foliage to the ground. Tobago canes are produced from *B. minor*, *B. maraja*, and *B. melanocantha*.

Other Palms, similarly suitable for the warm greenhouse and conservatory, are—*Astrocaryum minor*, *A. rostratum*, *Martinezia caryotæfolia*, *Wallichia densiflora*, *Sabal Blackbourneana*, *Rhaphis flabelliformis*, *Phoenix ferruginea*, *P. Sylvestris* (wild Date Palm), *Jubæa spectabilis*, *Areca monostachya*, *A. pumila*, *A. lutea*, *Livistonia Borbonica*, *L. Jenkinsonii*, *L. australis*, *Thrinax parviflora*, *Morenia Lindenii*, and *Cana de la Vibora* (Snake Cane).—HORTULANUS.

INFORMATION REQUIRED.

Mr. T. F. Prosser, chemist, Tatlock Street, Vauxhall Road, Liverpool.

Mr. S. Braidley, Oldhouse-at-home, Oldham, near Manchester.

Who are these parties? We advise our readers never to part with their plants or poultry without full information about the applicant.

STAGED BANK FOR STRAWBERRIES.

IN the princely gardens at Chatsworth, I lately noticed a mode of growing Strawberries, which I think might be advantageously adopted elsewhere. They were grown on mounds, raised and boarded, so as to resemble the stage of a greenhouse, only instead of the boards being laid flat, which they are to receive potted plants, they are placed on edge, and secured there, and, being filled with earth, another set of boards is fixed as a tier above them, leaving a flat space of fifteen or eighteen inches wide, for the plants to grown on. The boards being about eight or ten inches rise, and those I saw being returned at the ends and back, thus ending with one row of plants along the top, and from four to five feet high, the whole had a useful appearance, and, when in bearing, the fruit would hang over the boards, in sight of company.

The plan certainly deserves attention, and it may be made available many ways; for instance, a steep bank might be planted this way, and water might be applied without the

annoyance of its running all off, which is the ease where Strawberries or anything else is much watered on a steep hill side. Besides, a bank of Strawberries of this sort would form an excellent screen-work to any unsightly object, and, if the material forming the bank be good, there ought to be a larger quantity of Strawberries grown there than on the plot of ground occupied at its base.

There were several such stages at Chatsworth, with a good gravel-walk around them, rendering them accessible to company. And I was told the plants bore remarkably well, and the fruit being more than usually exposed to the air, they were likely to be well-flavoured. The plan is certainly worth adoption in very low, damp situations, where the plants are liable to damp-off during the winter; while in exceedingly dry ones, the greater mass of earth the plants have to grow on, and that of a kind suitable for them, when it can the more easily be made so, will be equally beneficial. The plan, I believe, is not new, for I have seen forced Potatoes grown on the same plan, twenty years ago; but its adoption for Strawberries is not so generally known as it deserves to be; as it will be easily apparent to all observers, that, with a little additional fixings, a few spare lights placed against such a bank must hasten the growth and ripening of fruit facing the sun, while the north side will be an excellent place for the late sorts, being kept in a bearing condition for a longer period than usual.—J. ROBSON.

QUERIES AND ANSWERS.

NEAPOLITAN VIOLETS.

"I had a pot of Neapolitan Violets given me in November last, which, in consequence of being kept too long packed, lost every leaf, and, although I gave them the most careful treatment with the means I could command,—I had no bottom heat,—it was the beginning of June before they were grown sufficiently to make cuttings. Even then I could not do as Mr. Fish directs, in one of your former volumes,—that is, tear them to pieces, and so have crowns with roots to them. I was obliged to cut each separate tiny crown, for my plant much resembled an old Seakale plant, standing high out of the ground. I then planted them in thumb-pots, with plenty of sand, placed them in a pit, on slate, about eight inches from the light, covering them also with a flat handglass, the slate being covered with fine charcoal. They have only just now begun to root. Would you recommend me still to plant them out on a prepared bed, and pot them at the end of September? or to shift them now into somewhat larger pots, and again into four or six-inch ones, about that time?"—R. S. X.

[Under the circumstances, you should have kept your plant in the pot, or planted it out without dividing. As it is, you had better keep potting on, if you mean to flower them in pots. If in a bed, plant out as soon as rooted. From your description, we can hold out few hopes of many flowers this season. Instead of nursing up a poor, sickly, starved plant, you should have tried to get a handful of runners in spring, which, struck in a handlight, would have been fine plants by this time.]

BEEs PLUNDERING HIVES.

"A hive of bees in the garden yesterday morning (Aug. 23) were observed to be very excited, and, at about eleven, turned out, and commenced worrying each other,—two clinging to one, and fighting till it was dead. In a short time they brought large pieces of comb out of the hive, and pulled it to pieces. This continued till night, and has been resumed again to-day. There are now some hundreds dead on the ground. They threw out a large swarm in June. The bees of an adjoining hive have been living outside the hive nearly all the summer."—C. J.

[Your bees have been attacked for the sake of plunder by those of some neighbouring hive. The fighting is thus accounted for, and it may go on till the stock is destroyed, or, at all events, much weakened. The assailants may be distin-

guished by their hovering about the hive, watching an opportunity to force an entrance. In such cases it will give the defenders the advantage if the mouth of the hive is contracted, so as only to allow a bee or two to pass at a time. As you say, "the bees of an adjoining hive have been living outside nearly all the summer," they are probably the enemy. Mr. Taylor says, "An assault from robber bees is a much more formidable evil than one from wasps. If but one or two strangers gain admittance into a hive, they will return again and again, always with an accession of force; and for a day or two it is often necessary entirely to close the entrance against them, opening it only at night. A supply of honey, given on the top, or even sprinkled among the combs of contending hives, will often divert the attention of the combatants: smoke is sometimes effectual, puffed into both hives. Others have found it advantageous to remove, for some days, a plundered hive to a distance; or even to make the belligerent hives change places, which gives a new turn to their ideas of *meum* and *tuum*."]

PIT FOR MELONS AND CUTTINGS.

"My master is going to erect a Melon pit, of which the length will be fifty-six feet, width thirteen feet, outside measure. Inside there will be five feet for a Melon bed, then a nine-inch wall, with two feet and a half of passage, then another nine-inch wall, with two feet and a half of bed, for cuttings and different other things to grow upon. Now, would two-inch pipes be enough for bottom and top heat, and how many of them?

"You would oblige by stating what sized pipe, and what sort of boiler you would recommend, and what the cost of heating.

"We intend to keep plants in it in the winter, and turn it into a propagating house in spring, as we have a large flower garden to furnish."—THOMAS KELLY.

[Without more details, we cannot say that we approve of the proposed arrangement of your house. You will not succeed well with cuttings in such a house, without bottom heat, and, hence, it would be advisable to heat the narrow side separately. There seems to be no difference in the two sides of the house, unless the wall at the narrow pit side is a foot or two higher, and the glass roof rather shorter there. If the house stands east and west, there may be some reason for that, but if it stood north and south, why not have a span-roof at once, equal on both sides, with the pathway down the middle, and the two beds on each side of the pathway equal in width? Then your heating would be equal on both sides. With your proposed arrangement you would require double heating power under the wide side.

Even if your house stood east and west, we should propose having the walk in the centre, and the two beds alike in width, more especially as you speak of turning the whole into a propagating house in the spring months. That would make each bed three feet nine inches,—ample space enough for holding soil for Cucumbers or Melons, and not too wide, as five feet would be, for reaching across and taking care of tender cuttings.

We would also advise, as much as possible, not to grow other things, when any size, with the Melons. It would be far better to divide your house into two or three divisions, and to have the plants in one, and the Melons in another, than to place Melons in both beds. When Melons are ripening they must have a dry atmosphere, and a hot one, to give them flavour, and that would neither suit cuttings, nor the generality of hothouse plants that could be grown there.

A small boiler of Weeks's, or Ormson's, or a middle-sized retort of Thompson's, or a common saddle-back or conical, costing some four or five pounds, would heat such a house admirably. We have no notion of heating by two-inch pipes. Assuredly a two-inch pipe would do little for you in imparting bottom and top heat to such a house. The amount of piping will depend on the time you commence propagating in spring, and the time also you commence Melon growing. If you commence Melon forcing in January, you would require much more command of heat than if you commenced in April. To make sure for any purpose, we would recommend three such pipes, and two of each,—a flow and return

in each bed, and a flow and return on each side for top heat. That would give you eight pipes for the length of your house. We do not like estimating expense, but if you calculated such piping at a shilling a-foot, with an allowance for bends, carriage, and fixing, you will come pretty near the mark; but it is best to have an estimate of all these matters, so that there may be no grumbling afterwards.

If such a house is to be used all at once, and without divisions, and, consequently, to be heated all at once, it matters but little where the boiler is placed. If bottom and top heat are to be given separately, as simple a mode as any is to bring the water from the boiler to an open tank, and that supplied with the necessary communication with both the pipes to be heated, and with plugs to be opened or shut as required. If this is done, it will be as well to have the boiler in the centre of the house. If you had several divisions in the house, and the boiler was placed at one end, then the simplest plan would be to sink the boiler low enough, and take a flow and return-pipe under the pathway, covered with a grating, and to connect this main flow and return with the pipes in the different departments, by valves, or even common beer-barrel taps, fixed in small connecting pipes. This plan answers thoroughly when all the other pipes are above, in level, the main, flow, and return. No more pipes would be necessary, as one pipe at the sides for top heat would be sufficient, instead of two. By this mode, as well as the open cistern plan, you can give top and bottom heat at pleasure, and in the different divisions as wanted. The only objection to the former plan is, that you must heat the main flow and return for the full length, at times when you wish to heat only the division next the boiler; but a little more air to the other department will prevent any injury from a little heat. That heating, too, could be prevented, by connecting the flow and return in each division, but the trouble and expense would not be compensated for in any great advantage.]

BEDDING GERANIUMS.

"Please to let me know whether there are any bedding-out Geraniums which will flower with the abundance and continuance of the Searlets, and what their names and colours are, as I prefer Geraniums to any other bedder? I have a small-flowered, very pretty, delicate pink one, with soft, velvety foliage; but the flowers bear only a small proportion to the leaves; and the same may be said of *Nutans*, a deeper pink, or earmine; also of *Sidonia*. Is the latter a bedder?"

"I kept several old Searlets through the winter, but am rather at a loss how to make use of them,—they do not look so compact as younger plants. Although it is rather late to ask the question for this year, should they be taken out of their pots, or how can I turn them to most advantage for a small garden?"—JANE.

[If the old plants do not, with you, grow and bloom better than young ones, the rule is, to let the old take their chance, or be destroyed, and to strike a crop of young ones annually. Some of our best bedders are over ten years of age, but young ones of the same kinds would be better in some places.]

There are at least one score of Geraniums which would flower as freely and as long as the Searlets, if people had a taste that way; but they cannot be treated in three different places alike. But two score kinds of the Searlet race are in the same fix. *Tom Thumb* is the best bedder at the Crystal Palace, and the fourth best in some of the eastern counties. *Punch* is by far the best bedder of the Searlet race at Kew; and *Magnum Bonum* is, unquestionably, the best Searlet bedder for Hampton Court; and there are other Searlets much better than any of these, but which will only grow best in particular places. A friend of ours is going to give up growing *Brillante* after this season, and *Brillante* is the richest bedder of the Variegated class where it succeeds. We ourselves have ordered the discontinuance of the *Variegated Alma* in our grounds, where it is not worth its keep; yet what comes near to a good bed of *Alma*, where it suits? Your *Nutans* was never a bedding Geranium, yet it is a most lovely flower, and one of the oldest crosses in cultivation. *Sidonia* is a splendid bedder, in about one place out of 300 or 400, and not worth a straw in the rest. *Lady Mary Fox* was the most complete bedder which we ever handled, yet it is not worth its salt on

our present soil. *Ignescens superba* is one of the best kinds, this season, at the Crystal Palace. With ourselves this same kind, this season, went all to straw, or leaf, with a bloom now and then. With a perfect practical knowledge of these things, how could we sit down conscientiously to recommend any particular kind of bedding Geranium for a garden we never dug or planted. But people who are ignorant of these things can hardly believe them, and go on haphazarding recommendations. What it all comes to is this,—for truth is better than gold,—that any plant that is likely to answer any particular purpose is recommended for trial only; but, unfortunately, in our country, no one will try a new plant, or buy a new plant, which is the same thing. Every plant, that has any merit at all, will do most capitally somewhere, and yours may be that very place; but unless you try, who is to know. Try *Diadematum*, *D. rubescens*, *D. carminatum* and *regium*; *Quercifolium*, and *Q. coccineum*; *Touchstone*; *Lady Mary Fox*; *Crimson Unique*; *Pretty Polly*, in very poor soil; *Ignescens rosea* and *superba*; *Dennis' Alma*, and *Duchess of Sutherland* (Turner's). Every one of these is best somewhere.]

FAILURE OF FRUIT CROPS.

WE have had such certain information that many orchards have been uprooted in Kent, and their sites devoted to other produce, owing to the continued failure of their crops, that we began to think that there might be some truth in the suggestion, that "fruit trees are getting tired of our soil and climate;" or, as the proprietor of one of the uprooted orchards, who usually takes "the night-side of nature," said, "the old soils, old trees, and old England, are decayed past recovery!" We happen to incline to preferring "the sunny-side of all things," especially when we cannot see any reason on which such "past recovery" assertions are founded; and this is the case with the despair about our fruit trees. Meteorologists show that, within the last twenty years, our climate has improved by its increased temperature; our soils remain unchanged in composition, but are bettered by draining; and observation can point to many localities where orchards are healthy and productive. They are in warmer and yet more elevated positions than the older orchards. "If age has nothing to do with the matter, and temperature everything, why does the Peach thrive, even as an orchard-tree, in colder districts of America?" At the time we could only reply to this query, from the despairer before-mentioned, by saying, "the summers are better there, and ripen the wood better;" but since then we have met with the following notes, from personal observation, by the editor of *The Genesee Farmer*:—

"A few weeks since, on visiting some friends in one of the finest fruit sections of Western New York, we told them we had come to see some of their celebrated Peach orchards. 'Nay,' said they, 'but to see the nakedness of the land ye are come.' And truly, for these once flourishing Peach orchards look as though they had been struck with a blast of barrenness. Many of the trees are dead, and on nearly all the leaves are curled up and withered. Plum trees are so affected with black knot, that they cannot furnish fruit enough for the eurolio to propagate itself in; and even the Cherry trees, hitherto healthy and fruitful, are so debilitated that the leaves curl up and the fruit is comparatively worthless.

"The dry, hot summer of 1856 enabled the trees to ripen their wood so perfectly that the following severe winter injured them far less than the comparatively mild winter of 1857-8, following a cool, wet summer, which did not ripen the wood. Even the Osage Orange hedges in this section looked worse this spring than they did in the springs of 1856 and 1857, after winters of unparalleled severity.

"Immature wood is more to be dreaded than cold winters; and happily we can do much more to avoid the former than to lessen the severity of the latter. That which is favourable to the healthy growth of a plant is favourable to its early maturity. Superphosphate of lime has a remarkably beneficial effect on the growth of Turnips, and it causes them to mature several weeks earlier than those liberally supplied with nitrogenous manures, which, while they induce an excessive growth of leaves, are not favourable to the formation of bulbs.

On the other hand, nitrogenous manures are exceedingly favourable to the growth of wheat; and they increase the proportion of starch in the grain, and hasten its maturity. We know little,—in fact nothing, with any degree of certainty,—in regard to the effect of different fertilisers on fruit trees; but it is safe to affirm, that the same general principle applies to them,—that anything which is favourable to their healthy and vigorous growth is favourable to their early maturity.

“Turnips manured with an excess of ammonia will continue to grow till cut down with the frost; while those on the same soil, and sown at the same time, manured with superphosphate, will be ripe several weeks earlier. So fruit trees on some soils, abounding in organic matter, continue to grow late in the fall, and do not mature their wood. They have an abundance of food, but it is not appropriate to their healthy growth. On this account, rich, low lands, are generally to be avoided.

“In ninety-nine cases out of a hundred, however, fruit trees are in no danger of being injured from an excess of fertilising matter in the soil. The danger lies in the other direction. A farmer, who has a large farm half tilled, cannot be persuaded to devote a few acres exclusively to fruit trees. He wants a crop of grass, or grain, as well as fruit. Such a fruit-grower need have no fears that his orchard will be injured by excessive growth. Animals half starved are more liable to disease than those supplied with a sufficient quantity of appropriate food. The same is true of fruit trees. Plant them on poor soil, or rob them of their appropriate food by the growth of other crops, and they are rendered much more susceptible to disease. Their constitution is weakened, and they are less capable of withstanding cold and other adverse influences.

“We believe the primary cause of the curl of the leaf in Peaches, and the black knot in Plums, is the low temperature of the soil. The leaves of a tree give off a large quantity of water. They maintain a kind of perpetual sucking action upon the stem, which is communicated to the spongelets at the extremity of the roots. If the roots are in a soil much colder than the air, they are unable to absorb sufficient water to supply that given off by the leaves; the consequence is, that the leaves curl up and die, and the fruit falls off,—or it will ‘shank,’ as Grapes do when the house is much warmer than the external border.

“Evaporation produces cold. Every pound of water evaporated from the soil abstracts a definite amount of heat. Plants growing in a soil evaporate much more water than would the naked soil. To cultivate other crops among fruit trees, therefore, not only robs the trees of nourishment, but reduces the temperature of the soil. But the great reason why the soil is colder than the air is owing to an excess of moisture. Heat cannot be transmitted downward through water. The remedy is evident. Remove the excess of water by means of underdrains. It has been found, by repeated trials, that a well underdrained soil is usually about 10° warmer than one that is undrained. Professor Schubler has proved that the loss of heat caused by evaporation, in undrained lands, amounts to 11½° to 13½°. In draining the Red Moss, near Bolton-le-Moors, Mr. Parkes found the thermometer in the drained land rose in June to 66°, while in that which was not drained it would never rise above 47°—a gain of 19°. Simpson says he has ‘frequently found the soil of a field higher in temperature, from 10° to 15°, than that of another field which had not been drained, though in every other respect the soils were similar.’ A writer in the *Quarterly Review* states that one pound of water, evaporated from one thousand pounds of soil, will depress the temperature of the whole mass *ten degrees*.

“A careful observer, near this city, informs us that his soil this season was quite cold till about the middle of June, whereas, quite early in the spring, we had remarkably warm weather. Under such circumstances, the equilibrium between the supply of food from the roots, and the demand of the rapid-growing leaves and branches, was destroyed,—the growth was unhealthy, and the trees were rendered weak and unable to resist the subsequent cold weather, and disease, loss of fruit and foliage, and in many cases death, ensued.

“This is an extreme case, and the best means that could be employed might have been found ineffectual, but it is evident that the injury would have been less severe, if the temperature of the soil had been higher. Unlike animals, plants do not

generate heat; they are dependent on the soil, and it is evident that a tree absorbing sap ten or fifteen degrees warmer than another, would be far less susceptible to sudden depressions of atmospheric temperature. During cold nights, evaporation from the leaves is nearly suspended; there would, consequently, be little loss of heat, and in a warm soil the temperature of the tree might be much higher than the surrounding atmosphere. While, therefore, the atmospheric changes are beyond the control of the cultivator, he might do much to mitigate their injurious effects, by raising the temperature of the soil,—and this he is enabled to do by thorough underdraining, and keeping the land loose and free from weeds, grass, &c.

“‘But why,’ we are asked, cannot Peaches be raised as easily now, as when the country was new?’ Because the dense forests afforded shelter from the severe winds, and, like large bodies of water, served somewhat to equalize the temperature. Then roots, remaining in the ground for some years after the trees were cut down, assisted drainage. The forests and the roots are now gone, and we must resort to artificial drainage, which it is well known not only increases the temperature of the soil, but when extensively practised has also an equalizing effect on the temperature of the air. Severe winters, and excessively dry, hot summers, are far less frequent now in England, than before the introduction of thorough drainage.”

BEE-KEEPING IN DEVON.

IN your last publication I was glad to observe an interesting communication, signed “T. W. W.,” on the comparative advantages of wide and narrow hives, a subject not yet, as I think, sufficiently investigated, although my own opinion inclines somewhat to that of De Gelieu, in favour of broad hives. Your correspondent’s table of the relative weights of each of his three stocks, at different periods, is scarcely conclusive enough for an accurate verdict in favour of a deep hive, although the experiment was made with swarms of equal weight to begin with. No. 1 (eight-bar hive) maintained the lead of No. 2 (seven-bar hive) up to the 21st of June, or the first three weeks (a very important point), when No. 2 passed it by a trifle, till the 29th of June, after which No. 1 was again in the ascendant for a few days, but leaving off on the 10th of August, four ounces behind No. 2, a mere trifle of difference, which any slight contingency might have occasioned, and on which no theory can be erected. No. 3 hive (eight bars), with a larger swarm to begin with, maintained its superiority in proportion to its numbers, although “T. W. W.” attributes blame to its queen, when it began to fall off. But an inspection of the table will show that a similar defection took place at precisely the same time, in the other hives for a few days, probably occasioned by weather, and so the relative positions were maintained to the end. Similar influences prevailing in the three hives, I cannot see on what your correspondent founds his opinion, that the heaviest hive (No. 3) will “probably not survive longer than next spring, unless provided with a new queen.” I should give a contrary opinion, from present appearances, for we are much in the dark as regards the provision made by nature for the preservation or restoration of queens. But the most interesting portion of the experiment remains for decision, when we are informed of the results to each hive on their return from the heath, to which they were conveyed on the 11th of August. I trust “T. W. W.” will satisfy our curiosity at the earliest opportunity on this head. It will further be very interesting to follow up the experiment during the winter and spring months, if your correspondent will continue his communications so long.—AN OLD APIARIAN.

BLACKBERRY WINE.—There is no wine equal to the Blackberry wine when properly made, either in flavour or for medicinal purposes, and all persons who can conveniently do so, should manufacture enough for their own use every year, as it is invaluable in sickness as a tonic, and nothing is a better remedy for bowel diseases. We therefore give the receipt for making it, and having tried it ourselves we speak advisedly on the subject: “Measure your berries and bruise them; to every gallon adding one quart of boiling water. Let the mixture stand twenty-four hours, stirring occa-

sionally; then strain off the liquor into a cask, to every gallon adding two pounds of sugar; cork tight, and let it stand till the following October, and you will have wine ready for use, without further straining or boiling, that will make lips smack as they never smacked under similar influence before."—(*Germantown Telegraph*.)

CRITICAL QUERIES.

ELEVATING VERTICALLY (See "Pruning," page 340).—To elevate the end of a horizontal shoot, or branch, it would need to be cut through on the under side. How far from the point of the shoot is it recommended to make this cut, in order to be able to elevate the point vertically?

HAWTHORNDEN APPLE (See page 345).—It was introduced into England from the North, before the grandfather of any one of the present generation was born.—**BOLDERO**.

WASPS AND THEIR NESTS.—Are any of the readers of *THE COTTAGE GARDENER* aware of the fact that wasps breed under water? My son in taking some nests lately, on the banks of a pool, found a great portion of some nests under the water level; in fact the young grubs overhead in water, and perfectly healthy. Can they thus hatch without air? Perhaps some of the intelligent readers of this work will throw light on the subject.—**R. ERRINGTON, Oulton Park**.

TO CORRESPONDENTS.

WORK ON PLANT CULTURE (*E. L.*).—"The Cottage Gardener's Dictionary," Second Edition, is the best we know for your purpose.

VERBENA PEGS (*Vervain*).—Yours do not differ from the hook made of thin galvanised iron wire already described in our pages.

WORK ON BRITISH AND EXOTIC PLANTS (*Subscriber, Happerholme*).—We know of no work on their culture with coloured or uncoloured plates.

GRAPES (*J. S. L.*).—The *Royal Muscadine* is a very different Grape from the *Chasselas Musqué*.

PLANTING A FLOWER GARDEN (*James Stewart*).—We never do this; no one can do so justly, unless he knows the place. We can only point out defects in proposed arrangements.

PEARS FROM OPORTO must wait for a week or two, until we can make an inquiry.

PETUNIA (*Rob Roy*).—Flowers large, stout, and good purplish-lilac. If it has the power to defy wind and rain, as you say, it is an acquisition as a bedder, but from cut flowers we can give no opinion on this point.

CATERPILLAR—PINE BEETLE (*C. W. F.*).—The caterpillar is of a very common insect—the Privet Hawk Moth. The shoots of your *Pinus insignis* are destroyed by the *Hylargus piniperda*. No remedy is known. Removing and burning all the affected shoots, and transplanting the tree to another place, might rescue it.

LETTUCE (*Melon*).—We cannot be certain what variety it is from your description. We might know it if we saw a specimen. Probably it is the *Drum-headed*.

FLOWER GARDEN PLAN (*W. Jolly*).—The beds (in Plan 9, Vol. X., page 433) are on gravel, and the box edgings are the lines which indicate the shape and size of the beds. All the walks are gravel, but the plan may be laid on grass, when no box edging would be needed. The box is to keep the soil from "running out" on the gravel, as we say.

NEW CROCUSES (*Janet*).—The following is the best list we have seen:—*Achilles*, most beautiful white; *Antelope*, entirely white; *Baron van Merwede*, fine striped; *Baron van Pallandt*, largest blue; *Copernicus*, blue and white; *Couronne des Indes*, large dark blue; *Duke of Cambridge*, fine blue; *Duke of York*, transparent blue; *Globe de Rigo*, large pearl blue; *Glorieuse*, fine variegated; *Harlequin*, blue, rose and white; and *Helicon*, fine pure white. We are indebted for this to the Catalogue of Messrs. Carter and Co., High Holborn. It contains the best list of bulbs we have seen.

PROPAGATING FUCHSIA FULGENS (*A Subscriber*).—Let the old plant go naturally to rest, at the end of the autumn, and keep it in the same pot, or ball, till the end of March, just as you would a Dahlia root. Then shake off all the soil from it, and divide the old roots into as many pieces as there are eyes or buds, at the collar of the plant, or as you would divide an old large "root" of a Dahlia. The *Fuchsia fulgens* requires exactly the same treatment, all the year round, as a good Dahlia in the hands of a practical cottager. He would strike them both from young cuttings in the spring. He would plant three or five kinds of his best Dahlias in the farthest side of the garden, and seven plants of this *Fuchsia* in front of them; then six Scarlet Geraniums in front of the *Fuchsia*, a rose-scented Geranium at each front corner, just to rub with the fingers when he passed, and between the Geraniums a row of Mignonette. In the winter he would keep the bottoms of the Scarlet Geraniums, with the bottoms of the *Fuchsia fulgens*,

and the "roots" of the Dahlias, in dry mould, and away from the frost, just like keeping Potatoes indoors over the winter.

CURTIS, THE ENTOMOLOGIST (*J. H. C.*).—He is a native of Norfolk.

W. H., Exeter.—We have only sheets 1 and 3 of your communication.

NAMES OF PLANTS (*W. M. F.*).—Your greenhouse plant is *Cuphea strigillosa*. (*Die Vernon*).—Your plant is *Celestina ageratoides*, by some named *Ageratum celestina*. It is sometimes called popularly "The Lady's Pincushion Plant." (*A. Z.*).—Your Ferns are,—1. *Asplenium adiantum-nigrum*. 2. *Asplenium ruta-muraria*. 3. *Ceterach officinarum*. 4. *Asplenium trichomanes*. (*R. H. H.*).—1. *Lythrum alatum*. 2. *Ononis cernua* (?). 3. Too bruised for us to recognise.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

SEPTEMBER 8th. LIVERPOOL AND MANCHESTER.

SEPTEMBER 14th and 15th. SPARKENHOE (at Tamworth).

SEPTEMBER 21st and 22nd. BRIDGNORTH. *Sec.*, Mr. Richard Taylor, Bridgnorth. Entries close the 15th of September.

SEPTEMBER 21st and 22nd. LICHFIELD.

SEPTEMBER 26th. PAISLEY. Entries close Sept. 18. *Sec.*, Mr. Wm. Houston, 14, Barr Street.

OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

OCTOBER 13th and 14th. CREWE. *Sec.*, D. Margetts, Crewe. Entries close 30th September.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. *Secs.* R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. *Sec.*, Thos. Robinson.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

"HELP ME, MY FRIENDS."

PITY the sorrows of an unfortunate individual, who, however, fully believes that he is only one among hundreds, or even thousands of the human race. After this melancholy introduction, let me say that I want, that which I know not how to obtain, viz., a young black and white buck rabbit, ditto doe, both, of course, of different strains; both, at all events, respectable in appearance, and which look well, even at a show, especially a provincial one, and likely, with care, to bring rabbits worth keeping. Now, where in the wide world am I to go for them? I may, of course, travel many miles, go to some dealer whom I know nothing of, and, very probably, get some inferior animals for my pains at last, at an enormous price, when travelling expenses are added to the price of the said animals.

Although I have, as above, expressed my want at the present time, yet the same remarks apply to those numbers of persons who wish to keep rabbits, fowls of various kinds, and other pets. By the bye, I also want a young buck and doe of the Himalaya rabbit. Now, I have no doubt but that numbers of amateurs, readers of your useful publication, are in a position precisely contrary to mine,—that is, they have all the animals I want, and those that many other people want, and would only be too glad to get something more for a good thing of its kind than table price. The great desideratum seems to be, some organisation by which buyers and sellers, among amateurs, &c., could let their wishes be known to each other. True it is, one might advertise ones wants, whether to sell or to buy, in your columns, but then what guarantee has one that the things are worth the money in the one instance, or that the money would be paid in the other? One might be quite willing to pay a fair price for what he wanted, if good; but might be shy at paying for what might be sent. Any one can foresee such troubles in such dealings, as may well prevent their carrying out their desires. Hundreds of purchasers would flock in, if they only knew that what they wanted they would have; and hundreds would be added to the present poultry, and rabbit, and pigeon amateurs, and, consequently to the number of your readers, if a simple

plan could be carried out for promoting purchase and sale among amateurs. The Londoner may, probably, with a knowing friend (if not capable himself), visit a London dealer and obtain his desires. But what are the multitude of countrymen to do, who have no dealer to go to, and, perhaps, know no amateur who has just what he wants?

Now, if you could devise and carry out some such idea as under, I think it would meet the case, and give a greater usefulness and importance to your paper. Why could you not keep a sort of register, in one part of your paper, of the wants of different persons? Thus, sellers might register what stock they had to dispose of, from time to time, and the lowest prices net. Buyers would read the register, and, if anything was entered in their line, they might, as they pleased, order direct of the seller, or, better still, order through you; and in this last case the stock might be always sent to you in the first instance. One of the experienced gentlemen who write in your columns might then examine them, and, unless they came up to their idea of excellence at the price named, they might return them to the seller, and so save the buyer; on the other hand, the buyer would have the satisfaction of knowing that he has some stock which has passed muster, after inspection of a judge, in either department.

Of course, this would entail some trouble to you, but you would get a registration fee, and also for those birds or rabbits on which you passed judgment a further fee, as you might regulate. This, however, a buyer would, probably, be only too glad to pay for the value of the opinion.

I merely give you, as above, some idea of the difficulties of a countryman, and also some ideas of my own, or a way to get over them. Crude as they are, you may, perhaps, take a hint from them, and do something to help us. Even if I was to go to London, I do not know any dealer or selling amateur; even if I found one out, I do not know what price I ought to pay, or the comparative excellence of rabbits, &c. I must, therefore, be at his mercy, and not even know, after paying the amount, that I have a good thing after all.—M. S. Y.

[No fee, however large, would induce us to undertake the suggested commissions. Tastes and judgments differ too widely for us to hope to give satisfaction; and, if a failure, or death, occurred to the animal purchased, we should have little mercy shown us. As to keeping a registry of animals required, and animals to be disposed of, what guarantee would that be against the disappointments our correspondent refers to? The only certain result would be the weakening of our exchequer, by depriving us of advertisements; for all might justly claim the same insertion of their wants, either as buyers or sellers!

No one need be at a loss to obtain rabbits or poultry such as he requires; for if he writes to the advertisers in our columns, or to the prize-takers, or other exhibitors, of the kinds he needs, and requests them to inform him of the prices of any they may have to sell, explicitly stating his object, he would soon obtain a supply. References would, of course, be required. Permission might, probably, be obtained to have specimens sent for inspection; the sender being indemnified from all expenses and damages.

At Mr. Stevens's monthly sales, an opportunity occurs for buyers to use their own judgment; and there may be found in the course of the season all varieties of poultry, Rabbits, and Pigeons.]

POULTRY AT THE CALDER VALE AGRICULTURAL ASSOCIATION'S SHOW.

THE annual Exhibition of this Society took place on August 28th, in the Piece Hall, Halifax, and passed off in a highly satisfactory manner. The attendance was large throughout the afternoon, and so numerous were the entries of the different animals for competition, that some little fear is entertained that, in a short time, should the same degree of progress be made, the Piece Hall will be too small for the purpose.

The entries in the different departments were as follows:—Bulls, 23; cows, 58; horses, 96; sheep, 21; pigs, 99; poultry, 242; pigeons, 81; rabbits, 5; vegetables, 33; and extra stock, 6. Total, 664. It will be interesting, as showing the progress of the Society, if we make a comparison of these

numbers with those of the previous years, thus:—In 1848 there were 263 entries; in 1849, 311; in 1850, 259; in 1851, 344; in 1852, 353; in 1853, 357; in 1854, 305; in 1855, 351; in 1856, 458; in 1857, 543; and in 1858, as above stated, 664. This may be taken as a certain proof that the Society is making safe progress. Not only in numbers, however, but in every other respect, may the Exhibition of Saturday be reported as superior to its predecessors. In horses, pigs, and poultry, it was greatly in advance of previous years, in quantity and in kind. In cattle it was in some respects, perhaps, inferior; but such a designation must be taken with many qualifications.

The poultry were very numerous, and the music they created was of the sort known generally as more noisy than sweet. Some of them came from great distances—Devizes, Ashton, Bedale, Birmingham, Aylesbury, Sheffield, Whitby, Kendal, Liverpool, Mansfield (Notts), Bolton, Ulverstone, and the neighbouring towns of Leeds, Huddersfield, Bradford, &c. We are sorry to have to say that a considerable majority of the premiums will go out of the immediate district. We think this need not be, and would advise local fanciers to strive harder for the laurels another year. The gentlemen who were most successful in Halifax were the Rev. F. Musson, Mr. A. G. Waithman, Mr. David Ashworth, and Mr. Dan Leeming. The whole of this department was excellent.

There was a capital lot of Pigeons, which formed a very attractive portion of the Show. Carriers, Tumblers, Fantails, Jacobins, and the whole of the different tribes were represented. There were two exhibitors from Birmingham in this department also, but Halifax held its own well. The Pigeons exhibited for the Secretary's Cup, were, in the language of a Birmingham fancier, unrivalled, and each pair was deservedly entitled to a cup had they been rewarded according to their respective merits. The whole of the Pigeons exhibited by Messrs. Smith, Holdsworth, and Firth, of Halifax, may well defy any competitors, and they bid fair to bother the great breeders of other parts of the country at the approaching Fancy Pigeon Show, at Halifax, in December. Expense in procuring fine birds seems to be no object with them. Their Pigeon-houses, which we have had the pleasure of personally inspecting during the last few days, are really neat affairs, and well worthy their handsome inmates. Halifax Show, so long famous for its exhibition of short-horns, is now remarkable for its fancy Pigeons.

We think the Show altogether was a most creditable one,—satisfactory to the exhibitors, the Committee of the Society, and the public.

The following gentlemen officiated as Judges:—*For Poultry*, Mr. Alfred Goodman, Gledhow House, Leeds; and Mr. John M. Thompson, Dewsbury.—*For Pigeons and Rabbits*, Mr. Wm. Cannan, Bradford; and Mr. J. W. Thompson, Southowram, Halifax.

The following is the Prize-list:—

SPECIAL PREMIUM.—*The Secretary's Silver Cup, for the best three pairs of Pigeons, viz., Pouters, Carriers, and Almond Tumblers.*—Won by J. Firth, jun., Lily Lane, Halifax.

POULTRY.

HAMBURGHS (Golden-pencilled).—First, A. G. Waithman, Halifax. Second, J. Dixon, Bradford. Nine entries. *Chickens*.—First, W. H. Fox, Mansion House, Horton. Second, J. H. Marsden, Saddleworth. Ten entries.

HAMBURGHS (Silver-pencilled).—First T. Keable, Rowdefield Farm, Devizes. Second, J. Dixon, Bradford. Commended, W. Maude, Victoria Place, Bingley. Nine entries. *Chickens*.—First, J. Dixon, Bradford. Second, W. Maude, Bingley. Commended, W. Maude, Bingley. Eight entries.

HAMBURGHS (Golden-spangled).—First, H. Carter, Upperthong. Second, J. Andrews, Ashton-under-Lyne. Commended, W. R. Lane, Birmingham; T. Barker, Leeds. Fourteen entries. *Chickens*.—First, W. R. Lane, Birmingham. Second, J. Dixon, Bradford. Four entries.

HAMBURGHS (Silver-spangled).—First, J. Mitchell, Hipperholme. Second, J. Dixon, Bradford. Eight entries. *Chickens*.—First, Bird and Beldon, Eccleshill Moor. Second, Mrs. H. Sharpe, Bradford. Commended, S. Smith, Northowram. Eleven entries.

SPANISH.—First, J. Dixon, Bradford. Second, T. Robinson, The Gill, Ulverstone. Commended, S. H. Hyde, Ashton-under-Lyne. Seven entries. *Chickens*.—First, Mrs. A. Watkin, Walkley, Sheffield. Second, S. H. Hyde, Ashton-under-Lyne. Commended, S. Robson, Pocklington. Four entries.

DORKINGS.—First, S. Burn, Whitby. Second, B. Wilkinson, Shelf. Commended, J. Price, Bedale; Rev. F. Musson, Halifax. Eight

entries. *Chickens*.—First, B. Wilkinson, Shelf. Second, Rev. F. Masson, Halifax. Eight entries.

Game (White and Pile).—First, A. G. Waithman, Halifax. Second, G. Smith, Shropes Bottom, Halifax. Five entries. *Chickens*.—First, R. Hemmings, Red House, Shelf. Second, W. Shuttleworth, Halifax. Ten entries.

Game (Duckwing, Grey and Blue).—First, Mrs. Dodds, Ovenden. Second, D. Leeming, Halifax. Four entries. *Chickens*.—First, W. Bentley, Cleckheaton. Second, A. G. Waithman, Halifax. Seven entries.

Game (any other variety).—First, J. Crossley, Manor Heath. Second, J. Dixon, Bradford. Commended, D. Ashworth, Halifax. Ten entries. *Chickens*.—First, W. Bentley, Cleckheaton. Second, D. Ashworth, Halifax. Commended, J. Reeday, Keighley. Seventeen entries.

SINGLE GAME COCK.—First, D. Leeming, Halifax. Second, W. Bentley, Cleckheaton. Seven entries.

BANTAMS.—First, A. G. Waithman, Halifax. Second, J. Dixon, Bradford. Nine entries. *Chickens*.—First, I. Thornton, Heckmond-wike. Second, W. D. Henshall, Huddersfield. Five entries.

COCHIN-CHINA.—First, Miss V. W. Musgrove, Liverpool. Second, Mrs. A. Watkins, Sheffield. Five entries. *Chickens*.—First and Second, Miss V. W. Musgrove, Liverpool. Commended, W. Dawson, Mirfield. Eight entries.

ANY OTHER DISTINCT BREED.—First, Bird and Beldon, Ecclehill Moor. Second, W. Dawson, Mirfield. Nine entries. *Chickens*.—First, S. Smith, Northowram. Second, J. Andrews, Ashton-under-Lyne. Six entries.

TURKEYS.—First, G. Haigh, Bermerside. Second, H. Edwards, M.P., Pye Nest. Three entries.

GEES.—First, J. Price, Bedale. Second, J. Dixon, Bradford. Seven entries.

Ducks (Aylesbury).—First, J. Dixon, Bradford. Second, D. Leeming, Halifax. Seven entries. *Ducklings*.—First, J. Price, Bedale. Second, Bird and Beldon, Ecclehill Moor. Ten entries.

Ducks (Rouen).—First, J. Dixon, Bradford. Second, S. Burn, Whitby. Six entries. *Ducklings*.—First, T. Keable, Rowdefield Farm, Devises. Second, T. Robinson, The Gill, Ulverstone. Seven entries.

PIGEONS.

CARRIERS.—First, H. Holdsworth, Halifax. Second, W. Smith, Kent House, Halifax. Commended, J. Firth, jun., Halifax. Six entries.

ALMOND TUMBLERS.—First, W. B. Akers, Halifax. Second, W. Smith, Kent House. Three entries.

BALDS, BEARDS, AND MOTTLED TUMBLERS.—First, W. Smith, Kent House. Second, J. W. Edge, Aston New Town, Birmingham (Balds). Commended, H. Holdsworth, Halifax (Red Mottled); W. Smith, Kent House. Eleven entries.

OWLS.—First and Second, W. Smith, Kent House. Commended, H. Holdsworth, Halifax. Five entries.

TURBITS.—First, H. Child, jun., Birmingham. Second, W. Smith, Kent House. Commended, W. Smith, Kent House. Three entries.

JACOBS.—First, J. W. E. Edge, Aston New Town, Birmingham. Second, J. Firth, jun., Halifax. Commended, W. Smith, Kent House. Five entries.

PANTAILS.—First, J. Firth, jun., Halifax. Second, S. Robson, Pocklington. Commended, W. Smith, Kent House. Five entries.

POWTERS OR CROPPERS.—First, W. B. Akers, Halifax. Second, W. Smith, Kent House. Three entries.

BARES.—First and Second, W. Smith, Kent House. Four entries.

DRAGONS.—First, J. Firth, jun., Halifax. Second, W. Smith, Kent House. Seven entries.

ARCHANGELS.—First, J. W. Edge, Birmingham. Second, J. Firth, jun., Halifax. Two entries.

RUNTS.—First, H. Child, jun., Birmingham. Second, J. Firth, jun., Halifax. Commended, J. Firth, jun., Halifax. Four entries.

NUNS.—First, J. W. Edge, Birmingham. Second, J. E. Mapplebeck, Birmingham. Commended, H. Holdsworth, Halifax; J. Firth, jun., Halifax. Four entries.

TRUMPETERS.—First, H. Holdsworth, Halifax. Second, J. Firth, jun., Halifax. Three entries.

ANY OTHER DISTINCT BREED.—First, H. Holdsworth, Halifax. Second, J. W. Edge, Birmingham. Commended, W. Smith, Kent House; W. B. Akers, Halifax. Seven entries.

RABBITS.

LONG-EARED RABBITS.—Prize, H. Child, jun., Birmingham. No competition.

COLOURED RABBITS.—Commended, H. Child, jun., Birmingham. No competition.

RABBITS FOR WEIGHT.—First not awarded. Second, J. Eastwood, Mill House. Two entries.

FOREIGN OR OTHER RABBITS.—Prize, H. Child, jun., Birmingham. No competition.

—(*Leeds Mercury, and a Correspondent.*)

WORCESTERSHIRE POULTRY SHOW.—There is a misprint in our last number. Speaking of the Worcester Show, we are made to say—"Unless the entries amount to £300," whereas it should be "300 entries."

CHOPPING EGGS FOR CHICKENS.

I AM in the habit of rearing large quantities of Pheasants and poultry, and my man complained of the long time it took to chop the eggs for the poults, so I had a machine made like a box-lid, with a perforated zinc top. It can be made any size. The eggs are put on the top, and bruised through with a knife. It saves a deal of time.—A SUBSCRIBER, *Bagshot*.

[A cullender with the holes rather enlarged answers as well.—ED.]

A TUMBLING RUNT.

I BEG to inform "A WELSHMAN" that I once possessed a small Kite-grizzled cock Runt, that used to soar with my Tumblers, and never broke flight: whilst ascending and descending he would turn a clean somersault. Now, this bird was certainly a Tumbler; but, from his appearance, the fancy would designate him an useless mongrel, for mongrel he was.

My son (Mr. B. P. Brent) mentioned my name in relation to a bird tumbling from the hand. It was a cock Almond, belonging to my elder brother, who was, at that time, an enthusiastic Pigeon-fancier. I have seen the birds repeatedly start from his hand, and perform a complete revolution before it alighted on the shelf—only a few yards distant.

I think one of the most pleasing sights in nature is a flight of varied-plumaged Tumblers on the wing at a great altitude. I have watched mine on a fine day till they mounted so high that they did not appear larger than humble-bees. Their flickering wings and diversified colours had a beautiful effect as they glittered in the sun's rays beneath a clear blue sky.

It is a recorded fact, that when the Almond Tumbler is high bred he loses the property of tumbling.—WM. BRENT, *Military Road, Canterbury*.

OUR LETTER BOX.

GUINEA FOWL CHICKS.—"An Old Subscriber has lost several Guinea Fowls at three weeks old, just as their wing feathers were being developed. They mope and drop their wings, and die in about two days. Can anything be done to prevent this? They are under a hen in a coop, and are fed upon chopped egg and crushed barley."

[It is now too late to hatch Guinea Fowls. Those described as dying at three weeks old, are evidently suffering from weakness, arising from the late period of hatching, and, perhaps, from constitutional debility, induced by close relationship of the parents. A little fresh animal food, as a few flesh maggots, or wasp grubs, or small worms, would prove the best restorative; and, remember, they ought to be fed every two hours.]

SPANISH FOWLS BECOMING WHITE (F. C. H.).—It is not an uncommon occurrence for these fowls to moult white, and at a future moult again to become black.

HEDGEHOGS (J. C.).—We have published several instances of these killing chickens.

GAME BANTAM CHARACTERISTICS (J. C. H.).—The great increase in the numbers of Game Bantams, and the importance their classes assume, have called attention to their merits and points. It is considered they should be the counterparts of the Game fowls, to which they belong by colour. It would seem impossible to take strut and vanity from a Bantam cock, but those professing to belong to Game should have full tails, and all the characteristics of the larger birds.

POULTRY BREEDERS' DIRECTORY (C. Cotton).—We believe that it has not been published. The publication, we fear, is not remunerative, and, if so, all additional printing would be a total loss.

CLAWS OF THE DORKING (B. B.).—We have seen them with eight claws, if, as by you, the spurs are so designated. Five toes are absolutely necessary for a Dorking in the show-pen. Six toes would not disqualify it.


LONDON MARKETS.—SEPTEMBER 6TH.

POULTRY.

The only novelty to note is the beginning of the Partridge season. Judging from appearances, they are plentiful, and generally good, forward birds.

	Each.		Each.
Large Fowls ..	4s. 6d. to 5s. 0d.	Leverets.....	2s. 0d. to 3s. 6d.
Small ditto.....	3 0 " 3 6	Grouse.....	3 0 " 3 6
Chickens.....	2 0 " 2 6	Pigeons	0 8 " 0 9
Geese	6 0 " 6 6	Rabbits	1 3 " 1 4
Ducks	2 6 " 3 0	Wild ditto	0 8 " 0 9

WEEKLY CALENDAR.

Day of Mth	Day of Week	SEPTEMBER 14—20, 1858.	WEATHER NEAR LONDON IN 1857.					Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
14	Tu	<i>Blæria ericoides.</i>	30.125—29.986	72—45	S.	.15	35 of 5	17 of 6	35 of 5	7	4 28	257	
15	W	<i>Blandfordia intermedia.</i>	30.204—30.133	74—55	S.W.	—	36 5	14 6	36 9		4 49	258	
16	Th	<i>Bossiaea linophylla.</i>	30.210—30.197	78—44	S.W.	—	38 5	12 6	39 10	9	5 19	259	
17	F	<i>Bouvardia versicolor.</i>	30.215—30.186	81—45	S.W.	—	39 5	10 6	39 11	10	5 31	260	
18	S	<i>Brachylæna nerifolia.</i>	30.252—30.156	75—49	N.	—	41 5	8 6	morn.	11	5 32	261	
19	Sun	16 SUNDAY AFTER TRINITY.	30.371—30.329	65—45	N.E.	.01	42 5	5 6	34 6	12	6 14	262	
20	M	<i>Brongniartia podalgroides.</i>	30.353—30.323	69—53	E.	—	44 5	3 6	11 2	13	6 35	263	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 67.0° and 46.2°, respectively. The greatest heat, 84°, occurred on the 17th, in 1843; and the lowest cold, 29°, on the 17th, in 1840. During the period 120 days were fine, and on 97 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

BROCCOLI.—Plant out the last crop one foot and a half or two feet apart every way.

CABBAGE.—Plant out plenty of the main spring crops; the small dwarf sorts at eighteen inches, and the larger sorts at two feet apart. To economise space, a double quantity may be planted in the rows, and every other one thinned out in the spring. Plants of the August sowing to be pricked out into nursery-beds three or four inches apart. To be watered, if the weather is dry.

CAULIFLOWER.—When the plants of the August sowing have leaves an inch or an inch and a half broad, prick them out three or four inches apart into nursery-beds, watering, and occasionally shading from the midday sun, until they have made fresh roots, and more stocky growth for planting under handglasses, &c., in October.

CELERY.—Freedom to the foliage should be allowed, to produce luxuriant growth, which is counteracted by frequent earthing-up, when a weakly attenuated growth is the result. When the operation is performed, the earth should be carefully closed round the stalk with the hand.

CORN SALAD.—Sow in drills six inches apart. This is a useful ingredient for salads during winter, when the outer leaves only are used, when quite young.

ENDIVE.—Lay a tile, slate, or board, upon each plant, or tie them up for blanching when they are quite dry. If particularly required, another plantation may be made.

HERBS (AROMATIC).—The decayed flower-stalks to be cut down, and the plantation cleared of weeds. The roots to be divided, if an increase is required; and the tops, if not done before, to be dried for keeping.

LETTUCE.—Sow without delay, if not done, as advised last week.

MUSHROOMS.—Dung should be prepared for beds, that may be made either in sheds or in the open air. Collect moderately-fresh horse stable-dung into a heap, picking out all the long straw and litter, and turning it over in a dry place, or where protected from rains, every three or four days, until the rank steam has passed away, and the whole is in a mellow condition, when it will be fit for making into beds.

ONIONS.—Sow, if not yet done, to stand the winter.

POTATOES.—If the haulm is withered, the sooner they are taken up the better; for it sometimes happens that a second growth is made in showery weather, by which their flavour is deteriorated.

TOMATOES.—Gather, when ripe, for soups, and the young green fruit for pickling.

FRUIT GARDEN.

VINES.—Give them the benefit of the sun, to ripen the fruit, by removing all unnecessary or ill placed shoots.

WALL and ESPALIER TREES.—Cut out any late after-shoots, or any that overtop or extend sideways beyond their proper bounds. Train in all shoots close and regular, to ripen the wood and all late fruit.

FLOWER GARDEN.

To prolong the season of blooming, here it is advisable to remove the faded blossoms and seed-vessels of *Scarlet Geraniums*, *Verbenas*, *Petunias*, &c., and to supply them with a little manure water, to stimulate them from their seasonal decline and languid growth. Attention should now be given, before the approach of frost, to the management of the masses, that the defects of this year may be corrected in the next. Duration of bloom, habit of plant, and colour, must be closely studied for effect.

BEDDING-OUT PLANTS.—Continue to put in cuttings of all the most desirable sorts; pot off all that are rooted. Young plants, recently potted, and making fresh roots, must have air night and day, when the weather is fine.

BIENNIALS and PERENNIALS.—Finish planting all that were sown in the spring.

BULBS.—Plant *Crocuses*, *Scilla's*, *Narcissi*, and other such early spring bulbs.

CALCEOLARIAS.—Put in cuttings. As they are apt to damp off in heat, they do best in a cold pit or frame, where they may be easily kept during the winter.

HARDY ANNUALS.—The self-sown seedlings to be thinned out in the borders: the strongest to be retained, as most likely to live through the winter.

HOLLYHOCKS.—Cut down the spikes within a few inches of the ground, when the plants have ripened their seeds.

ROSE STOCKS (BURNED).—Remove the wild branches of the stock, to encourage the buds that have started to make some growth.

SHRUBS.—Transplant, and remodel shrubberies where necessary.

WILLIAM KRANT.

FLOWER SHOW AT THE CRYSTAL PALACE.

SEPTEMBER 8 AND 9.

As compared with the experiment of the first autumnal Flower Show at the Crystal Palace, this might truly be said to have crowned the success of that bold leap in advance of the London nation, that flowers are over for the season when the country party return to their own gardens. London gardeners had no idea of what they could do till they were put on their metal by tempting prices and just criticism. Your "soft-sorder" people may do for fools and "fellows" of some Societies; but, depend upon it, that kind of talk will never raise a Cabbage or a Cucumber out of a dry soil.

But the dry soil of Ragshot Heath, when well trenched, will grow the finest CUCUMBERS in the world, for a tempting run of business. This Show

opened, at the west end, with a magnificent display of the finest of that race, from Mr. Standish; and one could hardly get near them the whole day, for the crowds, who justly admired them. There were three long rows of them, and seventeen or eighteen bunches in each row, and from one to four or five spikes of bloom in a bunch. They are of the new breed, between *psittacinus* or *Natalensis* and *oppositiflorus*, and they are not registered properly in any catalogue, English or foreign, that I have ever seen. With us they are put down as *Gandavensis* seedlings, or breed, or, at best, as the breed from *Ramosus* and *Gandavensis*. That is to say, beginning from the second generation instead of from the type. *Ramosus* was the first best seedling from *oppositiflorus*, alias *grandiflorus* of the shops, and *Gandavensis* was the first of the long-looked-for strain from *psittacinus*, which strain baffled the cross-breeders of Europe for ten or a dozen years,—I was one of them the whole time,—and was obtained at last in Australia,—*Gandavensis* being the Australian seedling. This new strain does not ripen its leaves till the end of the autumn, and requires a winter's rest in a dry state, and not to be planted out, in England, till the end of April.

After the Gladioli from the south, came the French and German Asters, the first tasselled, and the second quilled flowers; then the Dahlias, with the Hollyhocks behind them, on one side of the way; and, on the opposite side, the Fuchsias, Lilies, and Balsams. Each of these divisions occupied about eighteen yards.

The next division was forty yards of fruit,—all cut fruit and dished,—on a double stand along the centre of the way; and this ended the south nave.

The stove and greenhouse collections, and the variegated and fine-leaved collections of ditto, were most artistically arranged in half-moon groups at the four corners, where the naves meet the great central transept; and under the great Handel organ stood a long table, the width of the place, for the collections of Pears and Apples,—the table being loaded with such fruit as was never before seen in quantity and quality, except once at Willis's Rooms.

In the north nave,—another stand of fruit to match that just named,—the top shelf was filled from end to end with Peach, Nectarine, and Plum trees, in pots, orchard-house fashion; and two shelves, on each side below the trees, were loaded with single dishes of Grapes, Pines, Peaches, Nectarines, Apricots, Figs, Plums, Cherries, Nuts and Filberts, Currants, Oranges and Citrons, and, for the first time in Europe, a splendid dish of twelve Mangoes, the fruit of *Mangifera Indica*, the finest fruit in the world, which looks of the shape of *Magnum Bonum* Plums, and as large as middle-sized Pears,—the colour purple and yellow. These came from Leigh Park, the seat of Sir George Staunton, Bart. Mr. Scott, who began his career with Dr. Neill, in Edinburgh, and who there flowered *Clarkia pulchella* for the first time in Europe, has been gardener at Leigh Park, I should think, more than twenty years, and he looks now as young as when he left us in Edinburgh, in 1828.

I counted twenty-one dishes of Cherries and twenty-five of Figs; the rest were so numerous, I could not count them. After the fruit, were two divisions of Orchids, Ferns, Lycopods, and Pitcher Plants, on the left of the way, and opposite as much space with Scarlet Geraniums; then hosts of miscellanies on each side to the bronze fountain. The whole was most skillfully placed for effect. Verily, the Crystal Palace people will in time open the eyes of the natives, to see, to learn, and to appreciate the immense value of system and systematical arrangements; but there is no other place in England where flowers and fruits could be

set off to the same advantage. As to the croakers, who predicted the absolute unfitness of the Crystal Palace for Flower Shows, they have been buried in the very mud from which they sent forth their hideous howl.

The greatest triumph of skill and industry was in the growth of the *Saginellas*, or *Lycopods*. Nothing approaching their genuine loveliness was ever seen before, in the variety and splendour of the new race of *Gladiolus*, and in a natural, or most unnatural leap in the growth and size of the common Coxcomb, by Mr. Savage, gardener to Miss Guilloneau, Lower Edmonton. He had two collections of them, one for exhibition and the other for show; but his second best would beat all the Combs, since Mr. Knight, of Downton Castle, exemplified the scientific bearing of this kind of work, in his huge Coxcomb, a drawing of which hangs up in the Horticultural Society's Rooms, in Regent Street. Talk about Coxcombs, where there are, alas! too many of them already, and you will see their noses twisting as if they were smelling a fox. But had you seen Sir Joseph Paxton, and six of the best gardeners in England, discussing the probable effects of such an exhibition of Coxcombs, you would understand how they appreciate the value of a knowledge of common things, which was the great secret of their own individual success in life. These are the stamp of men to teach the gardening world how it should move on its own axis, without being attracted by one and repulsed by another body, in and from a different atmosphere.

As to the Dahlias, Asters, and Hollyhocks, you could not get near them after the public got in. The Japan Lilies were better done than ever, and more numerous. The Fuchsias were just as usual, except one collection, which was very superior to the general run, the premier plant in it being the *Marquis of Bristol*, the best double Fuchsia out. I never heard of it before, but there it was, and was of the strain of *globosa major*, and a magnificent thing.

SCARLET GERANIUMS were better than ever; but there was a great deal of roguery in the potting of three, five, or more plants in one pot, to make people believe it one specimen. I got the names of all the kinds, and the parties; but I shall keep them in pencil notes, till I am required to prove or eat my own words, or rather to be the wedge with which to split this part of exhibitions to splinters.

The cut Roses were just as good, and as numerous, as we see them in June. Some of the Balsams were very good, and some very bad indeed: the cottagers' collections looked much more like practical gardening than some which figured in the miscellaneous groups of their betters.

There will be some chancery suits, if not actual duels, among the collections of fruit exhibitors. Some of them are getting outrageously out of schedule. For ten dishes they exhibit twelve, and for twelve fruit in a dish will put in eighteen, or twenty, or even two dozen. I do not know whether the government that appoints the Judges be Whig, Tory, or Radical, but this I do know, that if the fruit Judges, and the Judges on florists' things, do not do better than was done that day, I shall have to issue the law on the matter, more clearly, and more to the point, than was done by any of my predecessors on the woolsack. There was a most scandalous departure from fairplay in the fruit and florist awards, and I warn the authorities of the Crystal Palace to look to it. It must have been glaring before I would notice it, as I make a point of pretending not to know the merits of awards at all. But roguery, or incompetence, in the Judges will soon put down the value of flower shows. There is not a man who knows the spirit of the thing better than I do. I

have been in it above twenty years, and there is not a bone, muscle, or movement in the body, but which I could thoroughly understand and dissect.

I begin the prizes with ORCHIDS. The first prize went to Mr. Gedney, gardener to Mrs. Ellis, Hoddesdon, Herts (six fine well bloomed plants), *Aerides Fieldingii* and *quinquevulnera*, *Saccolabium Blumei*, *Vanda tricolor* and *suavis*, and *Oncidium Lanceanum*. Second, Mr. Carson, who had—*Angræcum bilobum*, *Oncidium incurvum* (a delicate lilac gem); *Cattleya granulosa* (greenish-yellow and crimson lip,—a fine thing); *Aerides suavissima*, *Vanda cærulea*, (the earliest yet exhibited); and a dowdy *Vanda recurva* (not worth growing, but a noble specimen.) Third, Messrs. Jackson and Son, who had—*Cypripedium barbatum superbum* (fine); *Oncidium incurvum* (a gem); *O. divaricatum*, *Odontoglossum Bictonense*, *Oncidium oblongatum*, and *Vanda suavis*. Fourth, Mr. Woolley, with *Dendrobium chrysanthum* (fine); *Angræcum cardatum*, *Calanthe veratrifolia*, *Brassia verrucosa*, *Oncidium flexuosum major* (fine); *Epidendrum radiatum*. Mr. Hamp had an extra prize.

VARIEGATED STOVE AND GREENHOUSE PLANTS (in tens).—First prize, Messrs. Jackson. Second, Mr. Bunney, Stratford. Third, Mr. Rhodes. Fourth, Mr. Summers. Mr. Hamp had an extra prize. Here were the usual complements with *Farfugium grande*, and a variegated Chinese Azalea in Mr. Rhodes' group.

FOR TEN STOVE AND GREENHOUSE PLANTS.—First, Mr. Peed, who had two noble Vineas, two ditto Allamandas, a fine *Ixora coccinea*, *Cyrtoceras reflexum*, large *Crowea saligna*, *Roelia ciliata*, and a large *Leptodactylon Californicum* (a fine thing). Mr. Carson was second, with—*Pleroma elegans* (beautifully done); *Vallota purpurea minor* (more beautifully done), an 18-inch pot, with five bulbs round it, and one in the centre,—two of the side bulbs had each two scapes, and all had six blooms to the spike (my rare crosses from this, and the pollen of *Cyrtanthus obliquus*, which took nine years to effect, are lost, through the carelessness of Dr. Lindley, with whom I trusted the bulbs); a large *Ixora*, *Allamanda*, and a lovely *Aechmea fulgens*.

COLLECTION OF SIXES.—First, Mr. Page, gardener to W. Leaf, Esq., Streatham, who had a fine *Veronica variegata*. Third, Mr. Kaile, gardener to Lord Lovelace. He had a fine *Meyenia erecta*. I did not see a second in this class.

COLLECTIONS OF TEN WITH REMARKABLE FOLIAGE.—Messrs. Jackson first, with a splendid lot, and *Berberis trifurca* in the place of honour; *Dasylyrion acrosticum*, which bloomed magnificently at Kingston this summer, on one side, and *Pandanus odoratissimus* on the other; then an enormous *Cycas revoluta* at the back, supported by *Livistonia borbonica*, with shining, fan, and fingered leaves; then *Monstera pertusum* (alias *Philodendron*), with *Phoenix sylvestris*, and *Dion edule*, from Mexico.

Second, Mr. Bunney, with *Littæa geminiflora*, *Dracæna*, *Ropalisa*, *Aralia papyrifera*, *Ficus Leopoldii* (a noble India-rubber plant), *Solanum atropurpureum*, and the said *Monstera*, or *Philodendron pertusum*.

Third, Mr. Young; and these two more collections all in high metal.

LYCOPODS, the gems of the Exhibition.—First, Mr. Bunney, of Stratford. *L. apodum*, eighteen inches, or two feet across, the finest ever seen; *Schottii*, like a Canadian Spruce leaf; *serpens*, *Galeotti*, and *formosa*, all of a breed, with broad beautiful leaves; while *umbrosum* is in the style of an exquisite new Fern; and *Viticulosum*, ditto on a small scale.

Mr. Higgs, gardener to Mrs. Barchard, Putney Heath, was second; and Mr. Woolley, third.

For twelve magnificent exotic FERNS.—Messrs. Veitch and Son, first. The second prize was blundered:

that and the third prize card stood to one collection from Mr. Bunney: one of them was intended for the Messrs. Jackson.

After these stood the COCKSCOMBS, in twelves.—Mr. J. Savage, gardener to Miss Guilloneau, of Lower Edmonton, was first, taking the shine out of about six or seven times twelve of them. His Combs looked as if they all came out of the same mould, and as if dropped from another world. They were eight inches thick across the centre, and not tapering much to both ends, and goodness knows their length. I have seen longer Combs: he must have fed them on some new plan to have them so fat and so sleek on the sides. Mr. Lambert, gardener at Oakwood, Chichester, was second, with splendid Combs of the old run; and Mr. Voss was third. They said some of the plants were from cuttings after the combs were full grown, and their stems were not six inches long; but they will say anything.

For PITCHER PLANTS, the Messrs. Veitch were first, and Mr. Gedney second.

For ten EXOTIC FERNS, Mr. Baillie, gardener to J. Carbonell, Esq., was first; Mr. Summers, gardener to A. Mongredien, Esq., Forest Hill, second; Mr. Fletcher, gardener to J. J. Young, Esq., Kennington Lane, third; Mr. Gedney, fourth; and there were three extra to Messrs. Carson, Savage, and Mr. Halley, of Black Heath, who had a collection of his variegated Geranium, *Burning Bush*, hard by.

Mr. Sims, of Foot's Cray, Kent, took the first prize for BRITISH FERNS, and such Ferns! One would have thought they all came from the gold mines of Brazil, they were so beautifully done, and of such out-of-the-way kinds,—a huge plant of *Lastræa filix-mas paleacea* in the centre at back; *Lastræa filix-mas cristata*, *Athyrium filix-fœmina multifidum*, on right and left; then *Athyrium filix-fœmina crispum* and *depauperatum*; then *Scolopendrium vulgare*, *digitatum*, *laceratum*, *undulatum*, *lobatum*, and more sports of them, and all the rest of them;—but send to Mr. Sims for his catalogue of Ferns, which will teach everything about them. Second, Mr. Baillie; and third, Mr. Lavey. There were two good collections of these Ferns, with a large Fern case in each, competing for a silver cup. But I lost all patience before the Judges could decide, as it was a neck and neck race, in which I could not venture my neck to reach the prize, if it was decided that day. Nothing is a better sign of a good Show than to see the Judges at their wits' ends, which is as good as a play. D. BEATON.

(To be continued.)

FORCING IN ORCHARD HOUSES.

"I have for some time taken great interest in the culture of fruits in pots, in orchard houses, on Mr. Rivers' principle, and this season my trees are completely laden with fruit, handsome, and of fair size. I see Mr. Rivers, in his last edition of the "Orchard House," recommends forcing orchard houses. I am much inclined to try this method of producing early crops of fruit, but fear I may find difficulties in keeping up a regular heat, being merely an amateur, from home from nine in the morning till five in the evening, and having no gardener. Now, if I may so far trespass on your kindness, I want to know your opinion, or that of some of your valuable and experienced correspondents, on the following points:—

"In the first place, I think of employing a brick Arnott's stove as a heating medium, so highly recommended by Mr. Rivers, and am anxious to know if this stove, provided coke be used, and well supplied at nine in the morning, will keep lighted, and give sufficient heat till five in the evening, without attendance in the meantime? Of course, it must be taken for granted that the size of the stove is sufficient to heat the house under ordinary circumstances.

"Also, the back wall of my present orchard house, which I

think of converting into a forcing house, is clothed with a fine Peach tree, and, as I may, in the months of November and December, place plants, such as Camellias, in the house, for early blooming in heat, do you think I can, by nailing mats over my tree, or by any other means, prevent its coming prematurely into bloom."—HORTICULTURIST.

I HAVE not seen the last edition of Mr. Rivers' work, but, with all due deference to that great authority, I consider the "forcing of orchard houses" just so much of a misnomer, and liable to lead to a confusion of terms and ideas. It has generally been considered that the title "orchard house" should be a house that should receive no more assistance from heat than the sun gives, in connection with a covering of glass. Break through that idea, and you merely change names and terms, without any definite reason or significance, except to those who think there is a vast deal in a name. When we speak of Peach-houses, vineries, figeries, &c., we associate the idea of early and late houses with each, just to admit of forcing or not, as we please. What shall we gain, by calling any or all of these orchard houses, but a complete confusion in our nomenclature,—such as an unfired orchard vinery, a slightly fired orchard vinery, a regular forced orchard vinery, &c. Far better stick to the original idea, and, when fire heat is applied, drop the title of orchard house, and at once call it a forcing house.

I would not quarrel with the term, where, as in a vinery that had received no artificial heat, an Arnott's stove, or something of that kind, was used, to keep up or preserve the Grapes after they were ripened; but this is different to using fire heat to ripen them. When fire heat is given for accelerating, there is nothing in the appearance, or the mode of constructing such houses, so novel as to warrant giving them a fresh appellation. Perhaps some friend may say, the mere fact of growing different sorts of fruit in one house is sufficient warrant in such cases for the new term of "orchard;" but, if so, the term might as well have been used ages ago as now, for what experienced gardener has not been obliged to get many kinds of fruit out of one house? Mere growing in pots of fruit trees, is no reason for adopting the new term, as that was done largely and successfully before the orchard house was heard about; and even now, as I think, with great prudence and practical knowledge, some of the best orchard houses in the kingdom have been kept free, comparatively, from the pot system. A fruit house, unheated artificially by any mode, is the one alone worthy of the title of "orchard house."

I am glad to find that our correspondent succeeds so admirably with his plants in pots. I have no doubt they will answer well, where labour and time can be given for attending to them. Where these are at all scarce commodities, I prefer planting the trees out, even in an orchard house, and regulating the size of the top by due attention to the roots. For amateurs, the pot system has many advantages. They can at once more clearly see the effect of different systems of culture, and, in a small space, have a much greater variety; and, if the fruit should not always be so fine, I can well enter into the pleasure and delight with which they can place on the table what has been the result of their own watchful attention. The system, as a whole, has, therefore, given a great impulse to horticultural pursuits, and opened up a large new branch of trade, and, therefore, as conferring a great amount of pleasure to cultivators, and of profit to providers, should not be sneered at, even by those who prefer planting out to growing in pots.

In a previous volume will be found an account of a long low house at Mr. Lane's nursery, heated by a large brick stove, placed at one end, with a short funnel from it going through the back wall. I don't

think that even that stove was used for anything like early forcing. Besides that, the stove was peculiarly well placed for doing a large amount of work efficiently. Few men understand the Polmaise principle of heating so well as Mr. Lane.

This house is built on an incline, with a bed, on each side of a deep pathway, near the middle. The stove is placed at the lowest point; the heated air rises and traverses to the extreme end, over the beds, and the cold air rushes down the pathway, to pass over the stove, and be carried again to the farther end when heated. You may be able to apply a little of that principle without exactly the same advantages; but, unless your house were small, or your stove a very large one, I would advise you, with such a stove, to confine yourself to accelerating your fruit, by a month or so, instead of attempting to force more. That is to say, supposing your trees were Peaches, give the trees all the air possible in winter in-doors, or out of doors, with the roots protected, and in severe weather a slight protection to the tops. When the blossoms begin to expand, protect from frost on very sharp nights, by putting a fire in your stove; but do little more in the way of heating until the beginning or middle of March. A slight fire then of an evening, a larger one of course if cold and frosty, and a small fire in the morning, of a cold, dull day, will enable you to gather fruit a month or so earlier than you would have done without fire at all, and giving abundance of air. This month or so earlier will, most likely, be reduced to a fortnight, if you have no one to depend upon, from nine in the morning until five in the evening, to regulate air, &c., because, to ensure the safety and the health of your trees, you must neutralise, to a certain extent, the benefits you would obtain from extra heat. The difficulties will just be increased in proportion as you commence to fire earlier,—say, in January or February.

For instance, supposing that your fruit is set, and that you wish to have an average temperature of from 50° to 55° at night, and from 60° to 65° during the day in dull weather, and from 70° to 75°, or even 80°, at midday in bright sunshine, you will have no difficulty in securing your night temperature, because you will be at home. On a nice bright morning, you would want little more artificial heat,—your chief care would be to prevent the temperature getting too high, by air giving. But when the morning is cold and cloudy, and you have a fire put on, if there is no one in your absence to attend and give air if the sun comes out at all brisk, and the sun does come out for several hours unexpectedly, the fire will have raised the house above 60°. The fire heat and the sun heat meet, the thermometer mounts up to 70°, 80°, 90°, and more; no air is given, no shading is applied; and a few days afterwards you find the floor strewn with your promising young fruit, and colonies of red spider taking possession of the fine green foliage.

In your circumstances, there is but one remedy for such disasters,—a remedy, however, which must be obtained, by just so much loss of heating power, and the caring but little about an equality of temperature during the day. This equality is rarely found in nature in these lands, and is not absolutely required in forcing. Just proceed, as mentioned above, as respects using your stove; but, whatever the weather is, give air yourself early, if you do not keep a little on all night. Of course, you will soon be able to regulate the amount of air in some proportion to the weather. But the chief thing is to give it *early*,—say, before half-past eight in March, and an hour earlier in April. This air I mean to stay on until your return, and, therefore, it should not be given in excess. In cold days, with a little heat, the house will not be unduly

depressed. On a very sunny day, the air being given early will prevent a dangerous rise in the temperature, and that rise will be so gradual, that there will be no danger from scorching, by heated confined vapours. In your case, and under your proposed forcing, your sheet-anchor of safety will depend on early air-giving. I once forced a vinery very successfully on that principle. The temperature at night was scarcely ever above 60°. On bright days it would rise from 90° to 100°, and above it, and, of course, rose and fell gradually. Without the early air-giving, I should have expected scorching, burning, and other evils.

You may bloom your Camellias, in winter, in a temperature averaging from 40° to 45°, and that will not prematurely start your Peach tree, if plenty of air is given. Camellias are best forced to set their buds in May, or thereabouts, and then they will bloom early without forcing. If you raise your house above from 40° to 45° in winter, no matting-up of your Peach tree will save it from being excited. If you could cover it with glass, shaded with boarded shutters, or even thick canvass, and have an opening all along the top to the open air, you might force the house moderately as you liked. It would, however, be better never to raise the heat much above 40°, until you intend starting your trees in pots, and then all such trouble of keeping the Peach tree cool would be avoided. R. FISH.

THE AVENUE.

As the time for planting is now fast approaching, I judge a few remarks on the once fashionable avenue will not be unacceptable to the readers of THE COTTAGE GARDENER. It is a matter of doubt, whether avenues are desirable in point of taste; but I think a noble avenue in a large domain is a fine object. The mistake too often made is that of not giving sufficient space between the rows of trees and between each tree. I remember an avenue of this kind on the estate of the late Sir William Watkin Wynne, near Wrexham, in North Wales. The trees were Limes, and planted so close that when in foliage nothing could be seen through them, and the space enclosed was so narrow that little else but the road was visible. Excepting the trunks and the foliage, the spectator might as well have been confined within two lofty walls. In small grounds, the avenue has this bad effect, that the ground is cut in two parts, rendering the views from the mansion more confined. An instance of this injudicious mode of forming a straight avenue came under my notice a few days ago, at Burnage Hall, near Manchester, the residence of Samuel Watts, Esq. Straight avenues should never be planted through the centre of a small estate. They might be planted on one side with advantage; but I would always recommend them to be of a winding character, unless some pleasing object—such as an obelisk, a temple, or a Church—terminated the straight avenue. The width of the avenue, even in a small place, should never be less than sixty feet, and in a large park may even be 200 feet. A few days ago I met with a pleasing winding avenue, at Heath Bank, Cheadle, near Manchester, belonging to S. Kendell, Esq., planted with the *Cedrus deodara*. This will be in time a really beautiful object. In the noble grounds at Elvaston Park, the residence of the Earl of Harrington, on the contrary, there is a long straight avenue, planted with *Araucaria imbricata*. This is in a right position and form, for the park is extensive, and the views from the castle are varied. The avenue at Windsor is an example what effect a wide long avenue has, and there no idea of contraction enters the mind of the spectator. It is, as is well known, terminated by a noble figure

on horseback. Avenues in public parks are desirable, because of the pleasant shade they afford in hot, sunshiny, summer days. I observed in Hyde Park, last winter, that the Commissioners had planted an avenue of the western Plane tree, *Platanus occidentalis*,—a very proper sort of tree near a large town, because it bears the smoke better than any other tree. They have, however, in my humble opinion, made a great mistake in planting them on raised platforms, and for this reason, that the soil of Hyde Park is dry, and the raising the trees on mounds is an unnecessary and even hurtful expense. In low, or wet, grounds the planting on platforms is requisite, and of great service, lifting, as it were, the trees out of the wet.

The question may be asked, what are the best kinds of trees for avenues? The answer is, that it depends upon the kind of soil, and the situation of the estate. If the soil is moderately good, and the situation a level, sheltered one, then I would recommend, above all others, the Deodar Cedar. Its graceful habit, and lovely silvery green, renders it the most ornamental avenue we possess. It has the advantage, also, that winds will not break its branches off, which most other Conifers are liable to; and it is perfectly hardy, a character that, unfortunately, does not belong to the beautiful *Araucaria imbricata*. The *Abies Douglassii* is also a fine avenue tree, but in limestone soils its foliage is apt to turn yellow. In other soils, not too wet, it thrives well, and forms a handsome tree. Then there is our own noble Oak; but that is a spreading tree, and requires a large estate, and good, deep loam, to render it a suitable tree for this purpose. The avenue, if planted with the Oak, should be of the widest in space, never less than from 100 feet, nor less in length than at least half a mile.

The Lime tree, on account of its beautiful form, fine foliage, and rich perfume when in blossom, is a very desirable tree, and may be used for this purpose in a moderately-sized estate; only take care to place the avenue on one side, so that it may not divide the domain into two parts.

The upright Elm is also a good avenue tree, and thrives well in most soils. It may be planted, if carefully taken up, when of a good size, even to twelve feet, and thus have an immediate effect. It also has the advantage of not spreading so much as most other trees; hence, it will not injure the grass of the pasture or park.

The Horse Chesnut, in sheltered places, forms a handsome avenue. Its foliage is good, and it flowers profusely. A good example may be seen at Bushy Park, near Hampton Court. If this tree is planted in an exposed situation, the strong winds are almost sure to split off large branches annually.

The Beech tree may also be planted to form an avenue. It will grow well in most soils, and will bear exposure the best of any tree; but it must be planted young, not more than four feet high, and must have been often transplanted in the nursery, so as to have numerous fibrous roots, in order to ensure success.

Some recommend Poplars as avenue trees, but I cannot admire them, excepting, perhaps, the Abele Poplar. In low, damp soils, it is a very desirable kind for this purpose.

Whatever tree is fixed upon, the soil should be well prepared previous to planting. In July, or August, let the turf be pared off, the land trenched, and laid up as rough as possible. The space trenched should be at least six feet in diameter. If the situation is low, or wet, raise a platform for each tree, two feet above the level, and place under the soil a layer of broken bricks, or stones, to drain it. The platform may be kept up at the sides with turf, sloping upwards to the level; but the top part of the platform should

be flat, to retain the rains that fall upon it. For the first year or two it should not be turfed on this flat surface; but after that, when the trees are established, it may be sown with grass seeds. Each space should be enclosed with rails as soon as it is trenched, to prevent the cattle, if there are any, from treading upon the soil. Then, early in autumn, plant the trees. If Deodars are fixed upon, use two or three barrow-loads of a prepared compost to each tree,—this compost to consist of loam, sandy peat, and leaf mould, in equal parts. As soon as all are planted, give them a mulching of littery manure, both to keep their roots moist and to protect them from severe frost. Then secure the trees safe, from being blown about by the wind, with stakes. If they are large, the best protection is four strong wires, tied round the stem (with a thick piece of cloth between the wire and the stem to prevent the wire from cutting the bark), and fastened to four short, thick, strong stakes, driven firmly into the ground, six feet from the tree. These prevent the wind from injuring the tree whatever quarter it may blow from. Protect them also from cattle browsing or rubbing against them, by railing off a sufficient space for that purpose.

By adopting these methods of trenching, elevating, and protecting the trees from cattle, wind, dryness, and frosts, the avenue trees will succeed well, and grow much faster than if planted anyhow and left to their fate.

T. APPLEBY.

ROOT-PRUNING FRUIT TREES.

As the season is fast approaching for examining and pruning the roots of fruit trees against walls, or elsewhere, I think a hint as to how this operation should be performed may be of service to some of your readers.

My object in writing is from the following conversation with a gentleman who came to visit this place the other day. As we were walking round the kitchen garden, this gentleman seemed particularly interested in the wall-fruit trees, and, on coming to a very fine *Easter Beurré* Pear tree, he said, "What a very fine tree that is."—"Yes, Sir; fine wood, but no fruit. I must get about its roots by-and-by."—"And what will you do with them?"—"Root prune them." Then, with a shake of the head, "Ah," he said, "I had mine root-pruned, and have lost them by it."—"Well, Sir, I have root-pruned a great number, and never lost one."—"Well, how do you do it?"—"First and foremost, I make a straight line from the centre of the tree across the border; then a semicircular line from the base of the tree, meeting at the points like the letter D. Then I take off the mould very carefully, with a digging fork, down to the roots, or nearly so; then, with a spade, throw off the crumbs of soil left by the fork. Next, I proceed with the fork at the extremities of the roots, and gently loose them, shaking the mould from them, and, after bringing them all in view, cut all that want it, and, after putting some new soil, lay them carefully in their places again. Lastly, I cover in with about three inches of the same mould, and fill up the remainder with the old soil. The tree is then done with till the next or the following season, when the other half of the roots are done in the same way." My inquirer gave another shrug of the shoulders, and said, "Now I have found out the cause of my failure; I lifted mine altogether at once, and I think yours a very judicious plan."—G. C.

WHAT ARE THE TRUE DIMENSIONS FOR COMB-BAR HIVES AND BOXES?

I HAVE long had reason to believe that the dimensions given in apiarian works (viz. $11\frac{1}{2}$ in. diameter for seven and $13\frac{1}{4}$ in. for eight-bar hives and boxes) are considerably in excess of the true proportions, as shown by the little architects themselves, when left to the unrestricted exercise of their own instinct. In practice I have always discarded the smaller

fractions, reducing the square for boxes to $11\frac{1}{2}$ in. or 13 in. respectively; but this slight alteration does little towards lessening the evil,—for a great evil it undoubtedly must be, if my observations are at all correct.

During the present autumn I have measured many, both straw hives and wooden boxes, in which guide-comb had not been used, and the conclusion to which I am impelled is, that bees, when left to themselves, form at least eight, and sometimes nine, combs in a diameter of 12 inches!

This is so wide a departure from the received ideas on this subject, and is, withal, of so much importance to the scientific apiarian, that I am induced to ask those who are interested, to apply a carpenter's rule to all deprived stock hives, or boxes (not supers or Nadir's), which may come under their observation, and in which the bees have been allowed to plan their own habitations.

The present is, of course, the season for making these observations, and the results communicated through the pages of *THE COTTAGE GARDENER* might be of great service to many apiarians, as well as to—T. W. W.

OUR BOTANICAL GARDENS.—SITUATION FOR PAMPAS GRASS.

DURING the last year I have visited several public botanic gardens, and I have come to the conclusion that in no case are they made so interesting to the public as they might be. Anything that would alter this state of things would be good; so I suggest the following additions to botanic gardens, hoping that others more qualified than myself to advise will do so:—

1st. I think that in every British botanic garden there should be a part specially devoted to British botany. Not only do our British plants well deserve this, but I believe it would give very great pleasure and interest to many who care little or nothing now for botanical pursuits, because they believe their own home-fields and waysides have no beauty or interest.

2nd. A geographical arrangement of plants, either in zones or in countries, would be a most interesting addition to most botanic gardens where the grounds were of sufficient size.

3rd. A geological arrangement might be made with little trouble or expense, if joined with either of the two other arrangements. It is well known to geologists how much the geology of a country affects its flora, and a geological arrangement of plants well carried out might be not only very interesting, but very useful.

In some way or other, I am sure our public gardens might be made more interesting than they are at present.

Having several seedlings of the *Pampas Grass* last year, I planted them in different places in the garden, and one I planted by the side of a pond, where its roots would be almost in water. This one flourished better than any of the others: it was less injured by the winter, and is already in flower, of which the rest give no symptom. I may add, that those in the shade seem far the most flourishing.—H. N. E.

REMOVING LARGE HOLLIES, YEWS, AND AUSTRIAN PINES, AT GISBURNE PARK, YORKSHIRE.

I BEG leave to offer a few remarks in reply to the few lines which appeared in *THE COTTAGE GARDENER* for December last, page 135. Being a constant reader of that valuable work, I look for that little paper every week as though it was a letter from an old uncle that was about to leave me a small legacy.

When the first number in December came to hand I was carefully looking through its contents, and noticed at the above page some remarks on the removing of large Hollies. Well, thought I, that is just the very thing I am so busily engaged in. I read the article, and studied the matter carefully over, and thought if half the plants, which I was then transplanting, die, I should be in an awkward mess; but, as the old adage runs, "nothing venture, nothing win," and I had no time to lose; for my noble master had requested me a few days previously to plant a piece of ground adjoining the man-

sion. His Lordship asked me if I thought the time was seasonable to remove large Hollies and Yews? My answer to his Lordship was, that I considered May and June were preferable to the winter. However, the work having been commenced,—and during the time we had some heavy snow and keen frosts,—we required sixty plants to fill the ground, some of which were brought from a distance. The largest of the Hollies removed was 30 feet high and 18 feet wide, the smallest being 14 feet high and 8 feet wide, through the branches, some of which weighed upwards of three tons.

I also, at the same time, removed four Yews, one of which was 54 feet high, and required six powerful horses to remove it, weighing not less than six tons. The other was 36 feet high and 4 feet through the branches. All are doing well. Some of the Hollies have lost a few of their leaves, and all the others look as if they had never been removed.

I transplanted six Austrian Pines, which were about 13 feet high, and they are now looking remarkably well, appearing as if they had never been disturbed, and are open for any person to see, should any gentleman, or brother gardener, at any time take a stroll through this delightful part of Yorkshire.

All these heavy plants have been removed with what we commonly call three legs and blocks, and a sledge to carry them on to the place, at a cost of about 5s. per tree. Some of them were brought a distance of three miles, and none less than one mile; but, of course, the cost of removing depends entirely on the distance they are to be brought.

I simply write to say, that Hollies, Yews, and Austrian Pines, can be removed in December, providing the weather is open, as well as in May or June, if the work is properly executed, viz., if the plants are carefully lifted, the holes made a proper size to receive them, the roots carefully looked over, all the damaged parts cut off with a sharp knife, and the trees well fastened and staked.—RICHARD EASTWOOD, *Clitheroe*.

NEW AND RARE PLANTS.

GUSTAVIA INSIGNIS (*Showy Gustavia*).

Bloomed at Kew in June, 1858. A branchy shrub, about three feet high, probably from Colombia. Flowers cream colour, with the stamens forming a pink and yellow coronet in the centre. Very showy.—(*Botanical Magazine*, t. 5069.)

GESNERA DONKLARII (*Donklar's Gesnera*).

Flowered in June, 1858. Probably from Colombia. Introduced by Messrs. Veitch and Sons. The flowers rather dull red, but large; "and the fine velvety foliage, dark green on the upper surface, and purple beneath, amply compensate" for the want of brightness in the corolla.—(*Ibid.* t. 5070.)

PHILODENDRON ERUBESCENS (*Red-purple Philodendron*).

Introduced by Dr. Schott. Probably a native of the Caraceas. Very showy. Spathe dark purple outside and scarlet inside. A stove at Kew is nearly occupied by these brilliant Aroideous plants.—(*Ibid.* t. 5071.)

CÆLOGYNE SCHILLERIANA (*Schiller's Cælogyne*).

This Orchid comes from Moulmein. Sent by Mr. Lobb, collector for Messrs. Veitch and Son. It flowered in June, 1858. Flowers yellow, blotched with crimson.—(*Ibid.* t. 5072.)

ISOTOMA SENEIOIDES var. SUBPINNATIFIDA (*Groundsel-leaved Isotoma; subpinnatifid variety*).

A pretty greenhouse plant, from Bathurst, in New South Wales. Very like a Lobelia. Flowers bluish purple.—(*Ibid.* t. 5073.)

ORCHIS FOLIOSA (*Leafy Orchis*).

Native of Maderia, at an elevation of 3000 feet. Bloomed in June, 1858, in a cool greenhouse. Flowers purple. It closely resembles our *Orchis latifolia*.—(*Ibid.* t. 5074.)

SALT AS A MANURE FOR THE PEACH TREE.

I SEE by articles in your paper, that an opinion prevailed that common salt seemed to suit the Peach tree. I had one tree which set about three dozen of fruit, and then dropped them, except about fourteen. I resolved to try salt as a

preventive, and to see how it would agree with the tree. The border is inside the house, and the roots of the tree also. I sprinkled the soil with a good coat of salt-sweepings, which I buy at 6d. per hundred-weight. I then washed it in with clean water, and, in a few days after, gave the tree some strong soap-suds. I repeated the dose of salt three times, and suds I put on every week once. The result is, I have some splendid fruit, and well-flavoured. I tried the same upon two of the outside trees, and they beat the other trees hollow, which were not so treated.

I have been a reader of THE COTTAGE GARDENER from the first number, and never fear trying any plan recorded in its pages. I should like to send you accounts of Exhibitions, &c., in this neighbourhood, if they would be suitable to your pages. I do not want anything for doing the work, for it would be a pleasure to do something for the many lessons I have received from your valuable paper. I was once a piecer in a cotton-factory, and my employer, seeing my taste for plants, got me into a nursery for a time, and then into a gentleman's place. I am now with the Mayor of Ashton, as gardener, who kindly pays for your paper to give it to me.—JOHN HAGUE.

[We shall be glad to hear from you at all times, as we are to receive communications from all with a similarly clear head and kind intentions. Report to us your experiments and observations as they occur; but reluctantly we are obliged to decline reports of local Horticultural Shows. If we inserted one, we must insert all, and have our columns filled with the mere enumeration of prize-takers, to whom, and to their friends alone, would it be of the slightest interest, and of no use even to them. Any notes upon extraordinary productions at such Shows we shall be very ready to publish.—EDS.]

CLASSIFICATION OF SEA FLOWERS.

SINCE people began to study sea flowers, the nomenclature of the department of zoology to which they belong has undergone a "sea change," and those who took their first lessons from Johnston, cry out lustily against Mr. Gosse, for having introduced so many new generic terms, as to have compelled them to begin again. A zoologist of the last school will not hear of *Bunodes* and *Sagartia*, and such other new terms as have been adopted: he reckons all Anemones as *Actinæa*-flowers of the sun. But, to complete the perplexity, many modern writers,—myself among the number,—have held to the older terms in a sort of quiet repudiation of innovations.

In all matters of classification, the frequent changing of nomenclature is a bother, to say the least of it. But when new terms arise out of definite distinctions they are really more help than hindrance, because the principle adopted by scientific men is that of applying, as far as possible, terms which have a descriptive value. So, instead of frowning at a new generic or specific name, and feeling annoyed at having to adopt a nomenclature we have not been accustomed to, it is always better to ask at once, "What does it mean?" and if it has that enigmatical form which gives real value to technology, it may be better to adopt it willingly, than have to yield at last, in spite of one's own prejudice. These remarks apply to botany as much as to zoology; the great families of plants get more and more broken up into divisions; but when those divisions are founded on tangible distinctions, they help, rather than retard, the student; because the term by which the new genera are designated suggests, at once, some structural difference with which it is his business to be acquainted.

It was hardly to be expected that the impulse lately given to the study of Zoophytes should have no effect in a rearrangement of their several divisions, and I have long since gone with the stream, and adopted the new nomenclature. First, because it is of no use to be old-fashioned; and, secondly, because the great diversity of structure, observable in the several kinds of sea Anemones admitted into tanks, calls for a system of classification founded on physiology instead of mere fancy.

If the reader will make a cross mark, he will at once have a key to the structure of the whole tribe of Zoophytes. If he then surrounds the cross with a circle, he will have an ideal analysis of the anatomy of a sea flower. Cuvier made the division *Radiata*, in order to assemble together an immense

variety of creatures in which one common type is observable—radiation from the centre, and in the star fishes the radiate form is more strikingly exhibited than in any. The ray-like form is not to be easily traced, except by the naturalist, in many of the tribes belonging to this division; but in those which especially claim the attention of the aquarian, it is very plainly evident. A sea flower consists of a cylindrical column, the lower part of which may be termed the foot, because by means of it the animal holds by the power of suction to the object on which it has taken up its abode. The column itself consists of a double wall, more or less muscular or horny. Between the outer and the inner wall there is a series of vertical flutes of a gristly character, filled between with a gelatinous flesh, and the thick ring thus made encircles the stomach. The digestive orifice, therefore, occupies the centre of the column; and the most highly organised part of the creature is the outside ring of vertical plates of fleshy matter; because there are situated the organs of reproduction, the young sometimes escaping from the warts on the outer surface of the column, and sometimes from the mouth.

It is in the appendages of the top of the column or disc, that the ray-like structure is most evident; and for individual character and beauty we look chiefly to the tentacles which serve the Anemone for lungs, fingers, weapons of war, and, occasionally, means of locomotion. When relinquishing its foothold the creature skims the surface of the water, and, by a slow movement of the tentaculæ, uses the stratum of air next the water as a fulcrum for movement. It is in this possession of tentaculæ that the sea flower has its most obvious relationship to Zoophytes generally. In the fresh-water hydra there are no vertical plates, no lipped mouth, and but few of those details of high organization observable in the Actinia; but there is the sac-like stomach, open at one end, and fringed with tentaculæ, by means of which the creature secures its supplies of food. Even in the star fish, where the rays are coated with calcareous matter, tentaculæ are still to be traced in those thousands of delicate suckers which, when the animal is viewed from below, play on the glass like miniature piano-forte keys. Without eyes, without legs, destitute of the sense of hearing, and, perhaps, of smelling, the Almighty has compensated these creatures, as far as they need compensation, by a peculiar development of the organs of touch; and every tentacle is a hand reaching far out, for the means of sustenance, and for tokens of danger; and so perfect is the unanimity of action, the delicacy of sensation, and the combined power of the tentacular fringes, that they serve for eyes, hands, teeth, suckers, paddles, weapons of offence and defence, and, sometimes, even as baits and nets for taking prey. Hence, the daily observation of Actiniæ in tanks, where they exhibit all their individual peculiarities of temper, appetite, and eccentricity, chiefly in the various actions and uses of the tentacles, is as instructive as it is entertaining; and, while it gives us new readings in natural theology, it suggests, also, how much we have yet to learn of the varied workings of Omnipotence, in regions which we have yet but little, or not at all explored. In the light of science all the old fables become facts, and here is the Briareus of the sea armed with a hundred hands, and ready to do battle, to the despoiling of all comers.

When we come to examine the Actiniæ in detail, we find that they differ in form, proportions, and colouring, very considerably; but the chief differences are in the arrangement, number, and constitution of the tentaculæ. If you put the lovely *Dianthus*—the most gorgeous sea flower ever eulged by Peri “under Omar’s green water”—beside the strange-looking *Anthea cereus*, you see at once, that to class them together, except in the general assemblage of Actinoids, is impossible. A closer acquaintance with the various forms of sea flowers strengthens the desire to group them into smaller divisions; and thus we have a new classification, the invention of which has caused some little disputation among marine zoologists, but which, nevertheless, must be adopted until a better, if needed, can be devised.

A Sea Anemone, or *Actinia*, is a Zoophyte belonging to the class ANTHOZOA, or flower-life, and the order HELIANTHOIDA, or Sunflower-like creatures. The central disc of the sea flower is composed of the lips, which open into a mouth which communicates with the simplesæ that constitutes the stomach, and the petals or fringes that surround it are the

tentacles. The *Actiniada* are divided into two great families, *adherent*, and *non-adherent*. Among the first are those already referred to, which hold to the rocks by means of a sucking base; and, among the second, the *Edwardsia* may be cited as the most interesting example, because, instead of adhering by means of a sucking base, this creature lives in a tube which it constructs for itself, and from the mouth of which it protrudes its elegant star of tentacles. The *adherent* Actiniæ are divided into two distinct classes, namely, those which are capable of retracting their tentacles, and those which either never, or very slightly, retract them. Among the non-adherents the divisions into sub-tribes depend on more distinctive and individual differences.



Anthea cereus.

Now, if you place *Anthea cereus* and *Sagartia dianthus* side by side once more, and touch them both with the finger, you detect at once a very evident difference of constitution. If your sense of touch is very delicate, you will feel a slight stinging sensation communicated by the *Anthea*, and, perhaps, it may adhere very tightly to your finger, so that you may have a moment’s difficulty to get rid of it. I have frequently had them hold to my hand with such a firm grip as to have some trouble to detach them unhurt, but I never felt the stinging. The disturbance, too, does not cause the *Anthea* to withdraw his fingers; he remains expanded as before, but with less fullness, for, in fact, they can retract a little, but never close up in the style of a *Sagartia*; and, indeed, when they die, the tentacles still remain expanded, though their beauty is gone. But, on the other hand, the slightest contact with a full-blown *Dianthus* causes it to shrink, as if smitten with horror; and, if severely handled, it throws out an immense number of slender, snow-white threads, the end of every one of which is barbed; and these threads appear to have the power of entangling and destroying the prey which the animal may purpose to appropriate for its nourishment. It is as to this alleged benumbing and killing power of the barbed threads that the most energetic disputes have arisen. Mr. Gosse says, of the parasitic Anemone, the threads are “weapons of offence, and very effective ones;” and, at page 115 of “The Aquarium,” he describes the death of a little fish, a corkwing, resulting from contact with the filaments—“I saw the little fish with one of the filaments sticking to its mouth; it was greatly distressed; darted hither and thither wildly, as if in agony, and was presently dead.”

In a paper which lately appeared in “Blackwood,” from the pen of an experimental naturalist, this killing power of the barbed threads is denied, small fishes having been purposely exposed to their influence without any other effect than momentary inconvenience. That by means of the threads the Actiniæ do make attacks, and that the death of

the animal attacked often follows, I know but too well, from observation and experience; and, since I have been convinced that there is good reason to suspect the thread ejectors of powers fatal to small animals, I have made it a rule to keep blannies and gobies, and, indeed, all lively creatures, in vessels apart from the *Sagartia*.

But see the result of this striking difference of constitution. It forms the groundwork of a further division, and, after having separated those that cannot retract their tentacles from those that can retract them, a reason for further sub-division appears in connection with this emission of filaments. In common with other technologists, Mr. Gosse goes to the classics for a term by which to define this thread-emitting power of some of the Actiniæ, and Herodotus furnishes the word *Sagartia*, the name of a powerful nomad tribe, who furnished eight thousand horses to Xerxes army.* These people were a sort of classical Thugs, expert in strangling wayfarers; and, detecting a like passion in certain of the sea flowers, Mr. Gosse makes use of their name as a distinguishing mark, for purposes of classification; and hence we have a new division, under the generic term *Sagartia*, which includes a considerable number of the most popular of the sea Anemones. The other divisions of the adherent Actiniæ are founded on the structure of the tentacles, and the possession of warts on the stem of the column. About these latter distinctions there is little dissension. The word *Sagartia* is the main cause of quarrel, but the emission of threads is so distinct and striking a peculiarity, that, even by those who doubt their killing power, there ought to be no hesitation in adopting it as a good index for purposes of classification.—SHIRLEY HIBBERD.

(To be continued.)

QUERIES AND ANSWERS.

PLANTING HARDY BULBS.

"I wish to plant my hardy bulbs in pots, and to sink the pots in the borders, or rather some pincushion-beds. I find the transplanting them in leaf soon after they have done flowering does not answer. Will you kindly tell me if I had better plant *Hyacinths*, *Van Thols*, and *Narcissi*, in deeper pots than the usual ones, and what sizes I should require for one *Hyacinth*, two *Van Thols*, two or four *Narcissi*, which numbers, I conclude, I can put into three respective pots?"

"My beds are edged with the *Golden Stonecrop*. Should I plant my *Crocuses* inside the *Stonecrop*, or between that and the edge of the bed? Do all the different colours of Dutch *Crocuses* flower at the same time, as I have been disappointed by some *Crocuses* being out of flower before the others were in?"

"What time of the year should I plant the *Saffron Crocus*?"—KATE.

[All our best gardeners now prefer having their spring bulbs in the free soil, not in pots. They say, if you do not turn out the balls,—when the bulbs are removed from the beds to ripen the leaves,—the growth is so checked as to ruin the bulbs in two or three years; and, if you turn out the balls entire, and plant them so, they will soon turn dust-dry after all your watering; and, if the balls are shook from the roots, what is the difference between them and carefully-lifted "roots" from the free soil. We have done them both ways by the thousand, and with such numbers the free soil is far the best way. But both ways are best till you come to the removal, in May, then both plans are equally bad and treacherous; but, with care and a sharp look out, the pot-system ought to be the best. Deep sizes of small and large No. 48-pots are the best pots to use, but common 48s will do,—one *Hyacinth* and one large *Narcissus* bulb to one large 48-pot, and five *Tulips*, and *Crocus*, and *Scilla*, and such like small bulbs to the same; but three bulbs only for a small 48-size.

Plant the *Crocus* inside the *Stonecrop*. Some *Crocuses* are out of bloom four weeks sooner than others. All in one bed or row should bloom at the same time. The dealers

* *Sagartia* is marked 23 on the Eton Atlas, and the place and people are referred to in *Clio*, 125; *Thalia*, 93; *Polymnia*, 85.

would assort them so as to bloom at one time, and one ought to mark the time of flowering of the old *Crocuses* at home.

Plant the *Saffron Crocus* from Midsummer to the first of August, not later.]

VERBENAS TOO TALL.

"*Minna* would be obliged by advice on the subject of Verbenas growing too tall. Her garden in Lancashire has been a blaze of beauty this summer, particularly early in July, till the middle of August, when heavy rain came, and completely ruined the Verbenas. Her beds are mostly round, a yard across, and many of the Verbenas are *two feet* high; and the garden *now* looks rubbishy, and *far more autumnal* than any round the neighbourhood. Does the fault rest with the soil, or the want of proper pegging down, or the number of plants in a bed (from fifteen to twenty), or in what?"

[The ground was too rich, the beds too small, and the gardening too daring. Seven Verbenas would soon be too many for a circle a yard across. The plants should have been pegged down at first, and after that pruned and regulated every fortnight, so as to keep them low and thin. Yours is called "the London plan," where they get up a good show of them early, by planting very thick, and by letting well alone until Parliament is up, and all is up with the Verbenas at the same time.]

INITIAL ORNAMENTS OF LEAVES AND FLOWERS.

"I have initials to make, of either flowers or leaves, for a ball-room. Which of the two do you consider would look best? If of leaves, such as Box or evergreen Oak, what would look best for a ground colour? If you recommend flowers, or the petals of flowers, what colour would be the best, and what ground colour for the flowers? I suppose the flowers or leaves must be stuck on with gum arabic. The board and initials will have to be done the first week in October."—JOHN ANDERSON.

[A good deal depends on what the ball is intended to celebrate. The most beautiful way would be to make bold initials with chalk on dark green baize tacked on a board, and to fill the letters tastefully with Holly berries, gummed, or with some of the best crimson and orange berries of Thorns (*Crataegus*). In October, Dahlias are, or may be gone, else small scarlet, or whites, or bright pinks would answer; but no purple or lilac Dahlia will look well with lights. Michaelmas Daisies, or the flowers you choose, would be better than leaves. Dark green baize is the best ground, and there should be a border of leaves, in devices, at a distance from the letters.]

PLAGUE OF APHIDES.

"ON the 16th of July, 1847, there appeared in the neighbourhood of Bath, where I then resided, and, probably, in many other places besides, a species of aphid, and in such myriads, that people journeying were obliged to wear a veil as a protection. On the following day the numbers increased, and for several days afterwards smaller quantities made their appearance. Towards the afternoon of each day they pitched upon the underside of various kinds of vegetation, but chiefly Parsnips, Dahlias, and Onions, the tops of which they killed, also dying themselves. It did not appear to me that they rose at all after they once pitched, but others were added to them.

"Now, I have not observed anything of the kind since the above date, till about the same time this year, when there appeared here (ten miles east of Bath), a similar, if not the same kind of aphid; but, as they did not appear in such numbers at one time, I did not observe the exact date of their arrival, although they have been quite as destructive as in 1847. I had about five dozen Balsams, in as fine condition for making a good display by this time as any ambitious man or boy could desire; but the aphid pitched on points of the shoots as thick as they could cluster, and, not having any glass to place them under, I was obliged to let them take their chance.

Their growth was immediately stopped, and the points of the shoots are dead. They also permanently injured a promising bed of Zinnias, Dahlias, and varieties of scarlet Salvias, *Camertonii* in particular. Kidney Beans and Parsnips have been also materially injured. Onions not touched this time. I enclose a sample or two for your inspection.

"My object in troubling you with the above remarks, is chiefly in the hope that some of your entomological readers will favour us with some particulars as to the species, the cause of its appearance, &c.

"The field Bean is partially injured by blight round this neighbourhood, but it appears to me to be a different species from the above, and the attack is not general."—THE DOCTOR'S BOY.

[The particular species of aphid, alluded to in your letter, swarms, in a greater or less degree, every year, but only during the long-continued hottest and sultriest weather, especially if the atmosphere be in an excited electrical state. They then are known under the name of the Smother Fly, and in cholera years are supposed, by ignorant persons, to be the cause of that malady. The long-continued hot weather this summer has allowed them to propagate to an unusual extent.]

ERECTING AN ORNAMENTAL GREENHOUSE.

"Will you give me a little advice respecting a greenhouse I want to erect. My garden is walled round, and the only place where I can conveniently erect my house will be at the top of the garden, against or upon a wall facing almost due east. This wall is seven feet six inches high. My house I propose to be eighteen feet long, and twelve feet wide, from back to front. The purpose I want it for will be solely for plants, Geraniums, &c., with means of heating sufficient to keep out frost, but *not to force*. Now, will you tell me what kind of roof I should have? I fancy a span-roof, with the back span springing from the top of the wall: but should the span be equal both back and front? and what height should the front be? I mean the door to be in the front. The back wall I thought of covering with trellis arches, for creepers. I think of glazing the roof with Hartley's rough glass: how should I ventilate it? I think of having the front sashes *all* open, the same as in your £5 greenhouse, and yet I must have ventilation at the back somewhere, and I cannot *lower* the back wall."—L. R. LUCAS.

[In such a nice position for a greenhouse, with a flower garden in front, the first consideration with us would be a showy front, especially as the entrance is to be there. We would have the front, then, of much the same height as the present back wall, and from four to five feet of that we would have of glass, in moveable sashes. With a wall-plate at back, and one of equal height in front, one of the simplest modes would be to have a span-roof, equal on both sides, meeting in the centre, at ten or eleven feet from the floor, not in a single, but in a double ridge, with about nine inches between them. This space to be fitted with ventilating-boards, and covered outside with a wide ridge cowl, with openings all the way beneath, to admit air, and the cowl to keep out wet, as mentioned some time ago as in practice at Kimpton Hoo. Under such an arrangement, the walk would be in the centre. This would be the chief objection, as people in general like to walk round a house. Under this arrangement, with the exception of the ends and middle, rafters would not be required; strong sash-bars would do, fitted so as to receive glass, fifteen inches wide, and twelve inches deep. That may be of Hartley's patent. The front should be of crown, or sheet, so as to be seen through. Instead of this, a short, sharp hip at back, of three feet, might be used to a ridge, and the front all in one piece; the hip, or part of it, being made to open. Or three feet, or two feet and a half of upright glass may be fixed on the top of the wall, between the wall and a stout wall-plate. The most of this two feet and a half of glass being made to open, by swinging on pivots near the centre, or otherwise. The main roof would then be in one slope, and fixed as before. By this means there might be a shelf of fifteen inches all round, or more at front and less at back, a walk of two feet nine inches, and a bed or stage of four feet in the centre. This, perhaps, would be the most

attractive mode, as, if you gave top air at the centre of the ridge, you would require to get easily at that part, and, therefore, have your walk in the middle, or else have pulleys or chains, and either ventilators there, or sashes made to move, instead of a fixed roof,—the latter, in our opinion, being a great security against breakage, &c., as well as cheaper at first. With the exception of the round flower-bed, which should be removed, the flower garden will want little alteration, with the exception of lessening the round and length of the figure a little on the south side. A small circle might then be placed in room of the one removed, or, what would be better, a basket of flowers, a vase, or a dial or statue,—anything that would be an ornament, and leave a larger space than now between the side beds, as seen from the door of the greenhouse.]

HOW TO RETAIN PROPER TEMPERATURE IN A CONSERVATORY.

"I am experimenting on heating a small conservatory, but am at a loss to test the power of my boiler, as it requires much less heat to raise the thermometer 20° when the external air is at 60° than when it is at 20°. Can you tell me to what degree I should be able to raise my temperature at night when the thermometer stands out of doors at 60°, to enable me to command a heat of 40° all the winter, when the thermometer externally may be 15° or 20°?"—A.

[In answer to your question, we should say from 90° to 100°; but, if you are thoroughly anxious to know if you are safe, tell us the size of your house, the surface of glass, the surface of boiler, and the quantity and surface of piping; and that may save you wasting fuel, at present for no purpose but damaging what plants may be in the conservatory.]

INDIFFERENT GRAPES ON VIGOROUS VINES.

"Five years since, I put up a span-roofed greenhouse, about nineteen feet long by fifteen feet wide, and twelve feet high to the centre beam, every part of which consists of glass, except the back and side walls, which face the north and west. It is heated by hot-water pipes, on the most approved principle, and has been pronounced by all gardeners who have seen it a model house. It enjoys the earliest morning sun, and the afternoon sun in July leaves it about half-past four. The ventilation is effected by sashes, which face the east and south, open top and bottom, and by ventilators in the south roof, which open and shut by pulleys. At the time of erecting the house, I put in twelve Vines of the *Hamburgh* and *Muscadine* sorts, in an outside border to the east, each of which is trained to a single cane, and fastened to rods about fifteen inches apart, and ten inches from the glass. The border for the Vines was dug about three feet deep, and, after depositing faggots at the bottom, was filled with a strong loam, mixed with prepared manure from a fellmonger's-yard, and everything was done under what was considered first-rate advice. For the first two years, the Vines made marvellous growth. They were then brought into the house, and the border has been raised year by year, by manure, until it is now four feet deep, and reaches the holes at which the Vines are introduced, so that no part of the canes are left exposed between the outside and inside of the house. Under all these apparently favourable circumstances, I naturally expected good Grapes; but, although the crop has been good (twelve or fourteen bunches on each cane), the Grapes have for three successive years had the mildew. It has appeared as surely as the leaves, and only by a free use of black sulphur have I saved any Grapes at all, and the greater part of the bunches, instead of being compact and healthy, are weak and straggling?"—EXCELSIOR.

[That the Vines grow so strongly, shows that you have at least plenty of manure in your border. That that strength should be associated with a free production of fruit shows that your wood is moderately ripened, and that the adding of manure on the surface has prevented the roots getting altogether beyond the reach of the oxygenating influence of the air. The straggling and thin appearance of the bunches, from such seemingly good wood, may be partly owing to the wood

not being thoroughly ripened, and that, again, arising from extra moisture and extra richness in the border. We are the more inclined to come to this conclusion, when you tell us that each Vine is merely fifteen inches from its neighbour. We can hardly see how a Vine, in such rich pasture ground, should have room for a sufficient amount of foliage to throw off accumulated moisture in such a narrow space. Double of the space would be better. The mildew, we consider, would be apt to be produced by the same cause. There would be a tendency for the whole plant to get gorged with juices, and, if dull weather should occur, the leaves would become unhealthy, because they could not throw off the moisture they would under a bright sunshine. If such premises are at all correct, then your course of treatment has done much to increase the malady. You use fire heat when the plants are in bloom, and until the fruit is set, and, we presume, give none afterwards. That extra heat assists the Vines at that critical period, but gives an impetus to head growth, and that again correlatively acts on the roots, which cater eagerly for the demand made upon them. When you stop firing all at once, you do not at once stop the root action, and the leaves get more moisture, especially in dull weather, than they can evaporate, and a sickly condition is the consequence. In addition, then, to the preventives you have rightly used, we would advise lessening the number of Vines,—say, to eight or nine. Secondly, if you use fire heat at flowering time, as soon as the berries are fairly set, sprinkle the water pipes several times thinly with a paint of water and flowers of sulphur; and, in cold nights and dull days, put a sharp fire on, and give plenty of air, having some on always, even at night. Try this even now, but mind plenty of air. These will tend to harden and ripen the wood, and you may not require to do more. If carefully done, however, there would be no danger in lifting your Vines, near the surface into fresh soil, towards the end of September, and draining the border properly at the same time. If there is growth on the Vines, all the better; but you must keep that from shrivelling by shading, and a free use of the syringe. If you want well-flavoured, moderate-sized Grapes, you must set your face against rank manure. If that gets down four feet from the surface, and the roots revel and rot in it by turns, farewell to highly-flavoured, saccharine Grapes. If you could wait another season, we would advise trying now what an extra firing and plenty of air, with sulphur on the pipes, would do for you next year, in unison with keeping your border protected from rains in winter.]

SETTING A FURNACE.

"I am under the necessity of writing you regarding a furnace, which I am about having removed. It stands within a glass house, and is a complete nuisance to the plants therein contained, viz., from the dust and smoke which accumulates from it; and, moreover, any plants which are placed in the above-mentioned glass house seem to lose their varied hues, and assume a sickly appearance. This, no doubt, is mainly attributable to the thick coal-dust, which is caused by the fire; hence, by removing my fire outside, I shall get clear of this injury. It is in reference to the position of my fire, or the place where I must, at all hazards, set it, that I respectfully solicit your advice. At the end of the house, where I purpose placing it, there is a walk running within four feet of the same. In that small spot I must have my fire placed. I intend to excavate three feet, place my fire entirely out of sight, and cover with a strong wooden lid. Will that answer? Or should I, in case of its not drawing, for want of air, have a few holes in the cover? By having it so placed it will be at least two feet below the flue, which, I think, ought to give a good draught." — D. C. STALKER.

[Your proposed arrangements will answer admirably. There will be a good draught, if your furnace-bars are two feet below the bottom of your flue. Generally, enough of air would get in by the cracks of the door-lid to keep up a necessary combustion; but it will be as well to have two or three holes, one inch in diameter, in the highest part of the door. This plan we adopt ourselves. Of course you will have a damper for your flue. We find a small hole above the damper,—say, an inch in diameter,—communicating with the

chimney, will secure the combustion of most of the smoke; as the cold air rushing in beats back the smoke over the fire again.]

MANAGEMENT OF A FEW FERNS.

"I have some Ferns (including *Pteris hastata*, *Aspidium Sieboldii*, *Darea media*, *Adiantum formosum*, and *Gymnogramma chrysophylla*) planted in a greenhouse, in a border underneath the open shelf, near the front glass, so that, when the plants above are watered, the water percolates through the openings in the shelf, and reaches the Ferns below. They are planted in peat soil, with very good drainage underneath. Can you give me any hints as to their cultivation, especially as to their treatment during winter?"—W. M. F.

[Your *Pteris hastata* and *Adiantum formosum* are hardy greenhouse Ferns, and will thrive (but tolerably) under the front open shelf of your greenhouse. The *Gymnogramma chrysophylla* is a tender stove species, and will certainly perish in winter in the situation you say it is growing in now. The *Aspidium Sieboldii* and *Darea media* are unknown to us, and certainly are not in any ordinary catalogue. The Ferns in winter require a slight rest, and should then be kept moderately dry; hence, it is to be feared the drip from your plants will destroy them. To save them, take them up, and pot them, placing them on a shelf rather shaded; then keep them just moist, and free from frost. In the spring you may replant in the place where they now are. Some coarse, common kinds will bear almost any treatment,—such you may leave to their fate. Though Ferns love shade, they do not like to live in a dark swamp. See Mr. Appleby's remarks in a late number as to the treatment of greenhouse Ferns.]

ARTILLERY PLANT—COLZA OIL.

"A friend has recently given me a plant called the 'Artillery Plant,' and can give me no other name or information about it; nor can I, under that name, find any reference to it in any horticultural works I have in my possession. It is so curious a plant, that, though unable scientifically to describe it, I think it must be well known. It grows, in shape, something like a Fern, but has no other resemblance. From the upper surface grow a number of the most minute red buds; and when the plant is immersed in water, or copiously sprinkled, the buds open, and disclose a little white flower, and at the same time emit smoke, which is, of course, what has obtained for it the name of the Artillery Plant. Can you tell me its name? Could you also inform me from what plant Colza oil is extracted? A French work mentions 'Colza' as one of the varieties of *Brassica oleracea*, but I find this name in no other work; and a question has been raised, as to whether the oil is not extracted from a mixture of seeds. In Belgium there are acres of Buck Wheat grown, and one party alleges they were told that this was to extract oil from the seeds; and also throughout Germany there are fields of white Poppies, from the seeds of which oil is extracted; and it is asserted that all these seeds are sent to the oil mills in the neighbourhood of Lisle; and the question is, from which, or all, is the Colza oil extracted? It is also positively denied by one of the disputants, that oil is ever extracted from Buck Wheat: if not, for what is it grown, as they do not preserve game in Belgium?"—H. M., Herts.

[The "Artillery Plant," or "Pistol Plant," is called by botanists *Pilea allitrichoides*, and has been frequently mentioned in our pages. It is a native of the West Indies. Colza oil differs little, if any, from Rape oil. It is pressed out of the seeds of *Brassica campestris*, var. *oleifera*, or oil-producing. It is a native of this country, and called the Wild Navew or Colseed. On the Continent, where it is largely cultivated for the manufacture of oil, it is called *Colsat*, or *Colza*, of which our word Colseed is a corruption.]

FRUIT TREES FOR A SOUTH WALL OF FORTY YARDS.

A subscriber (G), asking for advice on planting fruit trees against a new wall he has just built, has very properly given the

locality, Derbyshire, for which he requires a somewhat different description of trees to what might have been recommended, had he written from Hampshire, instead. At the latter place, a Vine or Fig might have been planted against a south wall, with a fair prospect of success; while, in the moist climate of Derbyshire, it is useless to expect these fruits to do well, except in very warm summers, such as we have about once in ten years. Nevertheless, there are advantages in moisture, in some ways, and I often envy those who have it in greater abundance than we have in Kent. But, as our correspondent says his soil is tolerably good and deep, with a clay bottom, we strongly advise him to have it properly drained first of all. One drain about six feet from the wall, and parallel with it, and another about eight feet from that, will not be too much. It would also be better not to have the surface soil more than eighteen inches, or two feet deep at most; if it should be more than that, remove a portion of it, keeping the best at top; and, if the ground be very wet, it would be advisable to concrete the foundation for each tree in a semicircular form, with a radius of at least five feet, and not to allow a greater depth than eighteen inches for the soil, and to let the concreting slope towards the drain. Loose stones or rubble may be mixed with the soil, if heavy, and the whole exposed, as much as possible, to the action of the weather, before the trees are planted. For, be it remembered, it often happens that the first start determines the fate of the tree. And now to the planting.

Presuming the wall to be 120 feet long, and eleven or twelve feet high, with a south aspect, there will be space for five or six permanent trees, planted as dwarfs; and, if the wall was fifteen feet high, the same number of standards might be advantageously planted between them, so as to occupy the upper portion of the wall, which might be cut away when the lower ones reached them. But it is useless planting standards on walls lower than eleven feet, except in special cases. In either case, however, twenty-four feet between the dwarfs will not be too much; the first and last being twelve feet from their respective ends; and five trees will occupy the 120 feet of wall in question. And, supposing this to be the only piece of south wall in the garden, the possessor will naturally wish to have as varied a produce as possible. And, to accomplish this, the following list of trees will assist him:—

- Tree No. 1. *Royal George* Peach.
 „ 2. *Elruge* Nectarine.
 „ 3. *Violette Hâtive* Peach.
 „ 4. *May Duke* Cherry.
 „ 5. *Hemskirke* Apricot.

If another tree could be added, I would recommend a *Green Gage* Plum. Now, these are the principal trees, but, if standards have to be introduced between, let them be somewhat thus:—

Black Heart Cherry.

Moor Park Apricot.

Early Impératrice Plum, or any other good sort that is known to suit the neighbourhood.

Morello Cherry, which, though not often favoured with a south wall, yet deserves it.

Bigarreau, or *Elton*, Cherry.

Early Newington Nectarine.

The above may be varied considerably, to suit the tastes or wants of the party interested. But, in a general way, it is not advisable to plant Plums as standards: they ramble, and take up so much room, without bearing fruit, that dwarf-growing trees suit better. I have not introduced Pears, as they can usually be grown on other aspects, or as standards. In the cold, bleak districts, it would be better, in building garden walls, to have them flued, so as to be able to apply a little fire heat when wanted, as in the spring or autumn, when the wood does not ripen well; and, as it sometimes happens that coals are more plentiful in those districts than more favoured ones, it is always advisable to make use of that auxiliary, as by its help expensive coverings in spring may, in a great measure, be dispensed with, and a greater certainty of a crop guaranteed.—J. ROBSON.

ARTIFICIAL COMB.—It is the opinion of experienced apiarists, that it requires ten pounds of honey to produce one pound of wax; and it is therefore, easy to perceive how

much toil and labour the bees must expend, in order to fill their hives with the requisite quantity of combs to store up their winter's supply of honey. There have been frequent attempts made to construct artificial combs, but all attempts have hitherto failed. I perceive in an extract from a German paper, published in Eichstadt, that I. Mehieng, of Frankenthal, has, after repeated experiments, succeeded in casting perfect combs of wax, which appear to answer all practical purposes. A comb of ten by twelve inches weighs one and one-quarter ounces, and can be completed in forty-five minutes. I would direct the attention of apiarists to this subject, and I am sure, if something of the kind can be accomplished, that our Yankee inventive ingenuity can do it.—W. J. E., *Cattawissa, Pa.* (*Emery's Agricultural Journ.*)

HARDY AND HALF-HARDY PLANTS BLOOMING IN AUGUST,

IN THE ROYAL GARDENS, KEW.

RANUNCULACEÆ.—*Delphinium Staphisagria*, *D. azureum*, *D. Hendersonii*, *D. formosum*, *D. consolida*; *Clematis revoluta*, *C. tubiflora*, *C. flammula*, *C. cylindrica*; *Anemone vitiifolia*, *A. Japonica*, *A. hybrida*; *Aconitum Napellus*, *A. pneumonanthe*, *A. ferox*, *A. lycoctonum*.

PAPAVERACEÆ.—*Glaucium flavum*, *G. corniculatum*.

CRUCIFERÆ.—*Cheiranthus mutabilis*, *C. Cheiri*, *C. arbuscula*; *Cethionema pulchella*.

CARYOPHYLLACEÆ.—*Dianthus trifasciculatus*, *D. squarrosus*; *Arenaria larioifolia*; *Silene maritima*; *Saponaria officinalis*, *S. officinalis plena*.

LINACEÆ.—*Linum pubescens*, *L. usitatissimum*, *L. usitatissimum album*, *L. Lewisii*, *L. decumbens*, *L. perenne*, *L. Sibiricum*.

MALVACEÆ.—*Althæa cannabina*; *Lavatera unguiculata*; *Malva Thuringiaca*, *M. campanulata*.

HYPERICINEÆ.—*Hypericum hireinum*, *H. elatum*, *H. maculatum*, *H. quadrangulum*, *H. Androsæmum*, *H. dubium*, *H. marilandicum*, *H. hirsutum*, *H. perforatum*, *H. strictum*, *H. foliosum*.

LEGUMINOSÆ.—*Coronilla varia*, *C. varia compacta*.

ROSACEÆ.—*Potentilla Nepalensis*, *P. argentea*.

ONAGRACEÆ.—*Gaura Lindheimeri*; *Zauschneria Californica*.

LYTHRARIÆ.—*Cnipea purpurea*, *C. silenoides*.

CRASSULACEÆ.—*Sedum Ewersii*, *S. telephium*.

SAXIFRAGACEÆ.—*Astilbe rubra*.

UMBELLIFERÆ.—*Eryngium aquaticum*, *E. dilatatum*, *E. cretium*, *E. falcatum*, *E. campestre*, *E. glomeratum*.

DIPSACEÆ.—*Scabiosa agrestis*, *S. atro-purpurea*; *Cephalaria centauroides*, *C. australis*, *C. leucantha*; *Morina longiflora*; *Knautia arvensis*; *Dipsacus inermis*.

COMPOSITE.—*Galatella linifolia*, *G. punctata*; *Aster Bessarabicus*, *A. patens*, *A. Shortii*, *A. grandiflorus*; *Biotia comixta*, *B. macrophylla*; *Eurybia glandulosa*; *Agathæa ecclestis*; *Grindelia integrifolia*; *Palafoxia texana*; *Stevia purpurea*, *S. serrata*; *Eupatorium aromaticum*, *E. cordifolium*, *E. purpureum*; *Inula salicina*, *I. crithmoides*; *Gazania uniflora*; *Cryptostemma calendulacæ*; *Obeliscaria pinnata*; *Actinomeris Virginica*; *Venidium calendulacæ*; *Bupthalmum salicifolium*; *Helianthus trachelifolius*, *H. tomentosus*, *H. Californicus*, *H. multiflorus*, *H. Maximiliana*, *H. doronicoides*, *H. mollis*; *Pascalia glauca*; *Helenium autumnale*, *H. tenuifolium*, *H. quadridentatum*; *Morina nivea*; *Helichrysum bracteatum*; *Centaurea amara*, *C. depressa*; *Solidago Shortii*; *Linosyris vulgaris*, *L. punctata*; *Centaureidium Drummondii*; *Chrysanthemum atratum*; *Vernonia præalta*; *Sanvitalia procumbens*; *Calliopsis Drummondii*, *C. bicolor*, *C. Atkinsonii*, *C. lanceolata*; *Coreopsis auriculata*, *C. senifolia*; *C. latifolia*.

LOBELIACEÆ.—*Isotoma axillaris*, *I. petraea*; *Lobelia heterophylla*, *L. triqueter*, *L. syphyllitica*, *L. cardinalis*.

CAMPANULACEÆ.—*Campanula pumila*, *C. pumila alba*, *C. excisa*, *C. carpatia*, *C. carpatia alba*, *C. lactiflora*, *C. grandis*.

POLEMONIACEÆ.—*Phlox bonariensis*, *P. suaveolens*, *P. paniculata*, *P. Carolina*, *P. gracilis*, *P. Bourbonensis*.

CONVOLVULACEÆ.—*Pharbitis Dickinsonii*, *P. hispida*, *P. hispida Burridgeana*, *P. hispida alba*, *P. hispida atro-purpurea*, *P. limbata*; *Convolvulus lineatus*.

SCROPHULARIACEÆ.—*Chelone glabra*; *Pentstemon bar-*

batus, *P. barbatus albus*, *P. gentianoides*, *P. intermedius*, *P. Shepherdii*, *P. Buckii*, *P. Verplanckii*, *P. McEwenii*, *P. agreste*, *P. cordifolius*, *P. Maekyanus*; *Digitalis lutea*; *Linaria italica*, *L. purpurea*; *Thunbergia alata*; *Phygelius Capensis*.

LABIATÆ.—*Stachys lavandulæfolia*, *S. angustifolia*; *Physostegia Virginica*, *P. liniifolia*; *Salvia Grahamii*, *S. Grahamii coccinea*, *S. prunelloides*, *S. gigantea*, *S. fruticosa*.

PLUMBAGINACEÆ.—*Statice arborea*, *S. limonium*, *S. latifolium*; *Valloradia plumbaginoides*.

ASPHODELEÆ.—*Kniphofia uvaria*.

TO CORRESPONDENTS.

DIOSCOREA BATTATAS (*G. M'Call*).—You will find full particulars relative to taking up, storing, and cooking this tuber, in our No. 477. Mr. M'Call says his "are all in flower." We never saw them bloom.

MOMORDICA BALSAMINIA (*H. A. D.*).—*Momordica*, or *Charantia balsaminia*, the Monkey Gourd, is now in fruit at Kew. But in London, and south of it, this most beautiful of all the Gourd tribe could be grown out of doors, and trained to stakes like the Scarlet Runner.

ICE HOUSE (*Vigilante*).—Our correspondent will be obliged, and so shall we, by directions how to construct "a cheap, effectual, and durable ice house."

PERILLA NANKINENSIS (*An Amateur*).—This is a recent introduction; you will find directions for its culture in our No. 424. *Perilla ocyroides*, on which the genus was founded, has been called *Ocimum frutescens*, *Melissa maxima*, and *Mentha perilloides*.

HERBACEOUS CALCEOLARIAS IN POTS (*D. M. E.*).—There is little chance of saving herbaceous Calceolarias in the pots in which they have grown. Better to plant them out in a cool border, and raise some light, nice, fresh soil close to, and among the leaves of the young shoots. These will root, and may be kept and potted in small pots during the winter. Cuttings may also be made of the best. It requires great experience to keep an old plant, and, after all, the young ones will beat it in May. Sow seed also in August and September, and treat as frequently advised.

BUILDING A SMALL GREENHOUSE (*A Subscriber*).—You do not tell us what sort of a house you would like. In answer to a correspondent to-day, we have described how a house may be built moderately cheap and good. *Cheapest and best* are rarely synonymous terms. A very cheap house, span-roofed, may thus be formed:—Posts and wood sides all round, three feet and a half or four feet in height, span roof of glass to ten feet in centre, roof fixed, glass fifteen inches by twelve inches on strong sash-bars, openings there for small sashes to swing, luffer boards in the sides for a similar purpose. If such boards are covered with felt, there need be no particularity in having the joints very close. The felt should be tarred and sanded, or gravelled, every other year. The wood for the sides, and also for sash-bars, may be brought straight from the saw-mill, and, when up for a twelvemonth, painted inside with anti-corrosive. For a general collection, 45° would be a good average at night, in winter. A small flue would be the cheapest heating medium, unless you could manage a brick Arnott's stove.

NAME OF GRAPE (*F. W., Manchester*).—It is the *Black Museadel*, a characteristic of which is, that some of the berries are very large and others diminutive. The cause we believe to be, that it is a bad setter, and the small berries are without seeds. If the blossom was fertilised artificially, and the bunches thinned much more severely than the bunch you sent, we believe that the berries would be all large.

CATERPILLARS ON TURNIPS (*A Constant Reader*).—They are the "niggers," being the larvæ of a Saw Fly, *Athalia centifolia*. Employ children to pick them off.

LARDIZABALA BITERNATA (*A Subscriber*).—The *Lardizabala* is a Peruvian plant, of a climbing habit, and, so far as we have yet seen, requiring a warmish greenhouse to grow freely. When potted, or planted, give it fibry peat or loam. The foliage is the chief recommendation.

REPOTTING ORANGE TREES (*G. C.*).—The best time to repot Orange trees, is just when the trees are beginning to grow freely. Any decayed roots should be removed, but we prefer getting rid of part of the soil, instead of cutting away good roots. The next best time of potting, is when the shoots have nearly stopped growing.

CRYSTAL PALACE BEDS (*F. F.*).—You have been anticipated in the August monthly part, which you had not seen, when you wrote, reminding us of our annual custom since the Palace began.

YELLOW DENS CANIS.—A correspondent who describes himself as a successful cultivator of *Yellow Dens Canis*, will oblige Mr. W. B. Page, of Southampton, by sending him his address.

ROOTS OF WATER LILIES (*Die Vernon*).—The roots of the white and yellow Water Lilies, both native and foreign, and of the crimson and blue Water Lilies, as one sees them at the Crystal Palace, are best removed or retubbed, or repotted, or divided, for increase at the end of February, and early in March, just as they are on the point of starting into fresh growth for the season. One week or ten days later from that point is better than so much earlier, with the exotic Lilies; but we have seen the native Lilies removed, when it was convenient, any time during the winter. We have known ducks and drakes, geese and goslings, to have used a large pond at pleasure, for ten years, where the white and yellow Water Lilies were just established, and no more. The Lilies and the birds did remarkably well, and the ice from that pond was above 200 loads, on the average of years, and Gunter never could have cleaner, or clearer ice.

NAME OF A PLANT LONG INQUIRED FOR (*Kate*, in No. 512. *C. R. Manning*, in No. 501. *W. Wright*, in No. 489. *W. Gater*, in No. 482).—The plant that we first had a small specimen of from W. Gater, Teignmouth, Devon, proves to be *Mikania scandens*, the climbing Mikania of London, and the *Cottage Gardeners' Dictionary*. It is not new, but rather a rare plant; nor is it distinguished for beauty, but only for its smooth, deep green, peculiar-shaped leaves, which are cordate, sagitate at the base, repand, toothed, acuminate, with spreading, unequal lobes. Its flowers are produced in a sort of corymbose bunch, nothing superior to that of the common weed Groundsel. It requires the protection of a greenhouse.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

SEPTEMBER 14th and 15th. SPARKENHOE (at Tamworth).

SEPTEMBER 21st and 22nd. BRIDGNORTH. *Sec.*, Mr. Richard Taylor, Bridgnorth. Entries close the 15th of September.

SEPTEMBER 21st and 22nd. LICHFIELD.

SEPTEMBER 26th. PAISLEY. Entries close Sept. 18. *Sec.*, Mr. Wm. Houston, 14, Barr Street.

OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.

OCTOBER 13th and 14th. CREWE. *Sec.*, D. Margetts, Crewe. Entries close 30th September.

NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.

DECEMBER 17th and 18th. HALIFAX FANEY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.

JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.

JANUARY 20th and 21st, 1859. LIVERPOOL.

FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. *Secs.* R. Teebay, and H. Oakey.

FEBRUARY 9th and 10th, 1859. ULVERSTONE. *Sec.*, Thos. Robinson.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

PARTRIDGE SHOOTING.

EVERY newspaper, whatever its bent or politics, touches on Partridge shooting on the 1st of September. It is in everybody's mind. Papers devoted to sporting are thought incomplete if they do not say something about poultry. Last week we were asked to contribute knowledge of Grouse and Quails, and now we feel disposed to say a few words on sporting. We and our style are by this time known to the thousands who are our weekly subscribers. Those who like not the subject need not read it; those who do may, perhaps, find amusement in it. Mr. Kingsley, in "Two Years Ago," refers to "Mr. Sponge's Sporting Tour" as to a book that most people have read. He recommends shooting as a "tonic,"—a plague on all others, say we. His description of an Otter hunt gives proof that he has assisted at one, and, therefore, we will take our readers Partridge shooting with us.

We hardly know whether we pity or envy those whose lot it is to be east in the midst of it,—who can enjoy it every day in the season if they like,—who are never excited by it,—and who, above all, seldom miss a shot. Those who know not the pain of failure are strangers to the pleasure of success.

We write of that which Londoners, or, at least, those who from early boyhood have left the country, feel on these occasions. While very young, we were sent to London, and our early days were spent in a back office. It was rather an airy spot than otherwise. The windows looked on to one of the small square graveyards of the City Churches. There were four trees in it. It gave us this advantage, that when "bored"—excuse the term—with bills of lading, invoices, dues, and sometimes, in seasons of great occupation, with correspondences, beginning with "Esteemed friend and correspondent, your favour of, &c.," and ending with the curt "Sir, you will please to, &c.,"—when bored, we say, with this, we could look upwards, and see a small space of the glorious blue sky. We could watch the small, white, fleecy clouds as they passed over, and we always thought of home then,—not the decent and respectable house of Mrs. Martin in the City Road, but the home we had left. Our office was a large one, and three desks afforded accommodation for six clerks. That against the window belonged from time immemorial to the juniors. Yet, when we had accomplished a part of our time, and were promoted, we asked as a favour

that we might retain our desk. We look back now, when some of our daydreams have been realised, and others have brought only sorrow and disappointment, on the hours we have spent there with pleasure. Ours were indeed castles in the air. When we looked up, we saw the same blue sky we had so often gazed at for hours at home. Its associations were with freedom, air, and exercise. We were made to bear the idea of London, almost to look forward to it, by glowing descriptions of its grandeur and pleasures. But, so far as we were concerned in those days, we were always disposed to paraphrase Robinson Crusoe, when he found a drawer of pieces of eight,—“Worthless stuff; I would give you all for a bag of tobacco;”—so we would have given all the attractions of London for a few hours run in the fields.

Well, then, we used to fix our eyes on the blue sky, and “thus to ourselves did say”—“Three years more to stay here, then advance a step, get on by degrees, at last have a claim to a month’s holiday, have it in September, take out a certificate, borrow or hire a dog. Oh! what enjoyment. Then become a master, rent a manor, have shooting of our own,—holiday when we like. Then, perhaps, become rich, buy a house, and some land. What Pheasants we will have! What shooting!”

Those who have patience to read this must bear in mind that it is only a plain narrative. We will, therefore, say, that many of our calculations were rendered more remote by the fact, that, as soon as we had reached a tolerably good position, we married. We believe the usual theory is, that Londoners seek wives in the country, and countrymen in London. We did not; we went into our own county, and took our partner for better and worse. We married in March, and stipulated for our honeymoon in September. Our father-in-law could give lots of good shooting; but we must find a dog. We lived still in the City Road, but every evening we strolled as far from London as possible. Our wife missed the constant society of the farmhouse, and she felt the hours of the day to be heavy. Both of us had the desire to get into the country for a time. I was shooting mad. I use the first person singular now, as at times I must speak of two persons.

I had now the certainty of a holiday, and the prospect of good shooting. I wanted gun, dog, and equipments. I had become enough of a Londoner to look into the advertising columns of the *Times* for what I wanted. I soon bought a gun: of course it was advertised to be sold under peculiar circumstances, and the seller would have given me a long history of his exploits with it, and the misfortunes that led him to sell it, had I been disposed to listen. I believe I gave more than it was worth, and it was a bad one. The dog was a greater difficulty. I think I asked every one, likely and unlikely, whether they had a pointer, or setter, to lend. Many would lend me one till the second week in August, but all laughed when I said that I only wanted it for the month of September. My partner said he should be glad when my shooting was over. My wife said I talked of it in my sleep. I believe I did. The dear good woman laughed at my enthusiasm, but entered into my pleasure, and at last pointed out an advertisement:—“A gentleman, about to emigrate to Australia, where such a dog would be useless, wishes to dispose of a valuable pointer. It will be sold cheap to any one who will pledge himself to treat it well. No dealer need apply, and none but principals will be treated with, as a good master is more sought than a large price.”

The very thing. There was a small yard at the back of the house, and the next day saw us at the place where the dog was for sale. The gentleman was from home, and would be for some time, as he was visiting his friends prior to his departure, but his servant was authorised to act for him. He assured me there never was such a dog, and his owner would sooner kill him than let a stranger have him, or any one who would not take care of him. He was, indeed, handsome. My wife gently suggested something about a trial; but, as the man said his master would give a receipt and warranty, I became the purchaser. I ordered him to be brought home the next day. Poor Mrs. Martin was in consternation when I said I had a dog coming. She should be afraid of her life of being bitten. Then she had nowhere to put a dog; and she had in her lifetime refused lots of lodgers because they had dogs. I, however, pacified her by saying I would buy a kennel, and that it would always be tied up. My wife

suggested it should be sent at once to her father’s, but I preferred having *my pointer* with me.

The following morning I bought a second-hand kennel, and a new chain and collar. The dog was brought in the evening. I made the man tie him to his kennel, as I was yet a stranger to him. He had not left many minutes when the dog began howling. I went down provided with food, thinking he was hungry. It pacified him, and my wife and self went for our evening’s walk. Need I say I monopolised the conversation, and that all ran on shooting. During this walk I bought a whistle, a whip, and a cap-holder. I should have bought some powder, but my wife said she should be afraid to sleep in the house with it. Those who are not as great enthusiasts as I was and am for shooting, cannot imagine my pleasure as I gradually provided myself with all that was necessary. I had dog and gun, and, that which is still more difficult to procure, I had good shooting. There was now to my mind only a question of time between me and the realisation of all my anticipation.

I trod lightly, my mind was buoyant, my early dreams were being realised one by one, and I approached my home as happy as man need be. We were yet some distance from it, when I thought I heard a sound that was already familiar to me. It was such a howl, varied every now and then by a sharp bark. I took no notice, till my wife called my attention to it. I assumed a carelessness I did not feel, as I said, “Ah, it is nothing, it is only for a time, I will soon cure him,—lucky I bought this whip;” and I took it from my pocket. As we approached the door, the noise, of course, became louder. Several of the neighbours were at the windows, and, to my eyes, they seemed to be waiting for me. Mrs. Martin opened the door,—“Oh! Sir, that dog, Sir!” “Well,” said I. “Don’t you hear him, Sir?” “Well,” I said again, “he is just now making a little noise.” “Little, Sir!” said she, “all the two hours you have been out, he has not left off one minute, and nothing will pacify him.” “I will soon do that,” said I, and I went to speak soothingly to him. But it was of no use. I produced my whip, and he flew at me to the length of his chain. Mrs. Martin had tried food, and he was surrounded with bones and pieces of bread. This was eight o’clock. At ten, Mrs. Martin had said, “she was very sorry but the dog must be removed.” My next door neighbour, an excellent man and a good friend of mine, had said, “he would feel particularly obliged if I would pacify my dog, and prevent his howling, as one of his children was very ill.” Another, a man with whom I was not very friendly, “would thank me to put an end to the nuisance;” and a third, “hoped I did not mean to keep that howling dog all night.” I thought, perhaps if he were in-doors he would be quiet, and accordingly asked Mrs. Martin to allow me to put him in a back kitchen. She consented for one night only, and with a proviso that I should take him away in the morning before she was about.

(To be continued.)

MANCHESTER AND LIVERPOOL POULTRY EXHIBITION.

THIS Exhibition of Poultry was held September 8th, in conjunction with an Agricultural Society, which has been established for a great number of years; and, on the authority of the gentlemen who officiated as Judges,—Edward Hewitt, Esq., of Spark Brook, Birmingham; and Wm. Lloyd, Esq., of Brook House, Weaverham, near Northwich,—we are enabled to say, this was, by very far, the best show of poultry that has as yet been exhibited at any of their Meetings; indeed, so far as chickens were concerned, it might fairly rank among the very highest of the present year. Most of our principal exhibitors competed; and the premiums were, in many instances, attained only after the closest competition.

The *Spanish* fowls were excellent, and the *Dorkings* unusually so; *Hamburghs*, of all varieties, abounded, and the *Pencilled* birds were superior to any exhibited this season. The attention paid by amateurs, in this neighbourhood, to the breeding of these truly beautiful birds being greater, perhaps, than in any other locality,—even in the *extra* class, specimens, that left but little to desire, could only reach a high commendation.

The falling off in the classes for *Polands*, of every variety,

was remarkable; and we ourselves really feel astonished at the inattention lately manifested towards these very useful and equally handsome varieties. The fact was, in chickens there was not a competition whatever; and, even in the adult class, three pens only of scarcely passable birds were exhibited. Poland faneiers must, indeed, push forward a little from their present supineness, or, as a matter of course, Committees generally cannot long offer valuable premiums, where the entries are so limited, and the fowls shown so undeserving. These remarks are rendered compulsory, from the fact that the falling off alluded to has lately become an almost general feature of this year's Meetings.

The *Game* naturally showed to a considerable disadvantage, consequent on moulting-time.

The *Turkeys*, *Geese*, and *Duck* classes have never been equalled at any former Meetings of the Manchester and Liverpool Society; and great credit is due to the collection of pens from Knowsley, for the high position they maintained on the prize list.

The attendance during the Show was very good, and the Exhibition received its well-deserved meed of praise from the visitors generally. The birds, too, were well attended. But, undoubtedly, in future years, it would be well to complete the arrangements sufficiently soon to permit the Judges to conclude their arbitration prior to public admission; this year, on the contrary, several hours elapsed before the gentlemen alluded to could even commence their labours, after the Show was opened to all parties.

DORKINGS (Speckled or Grey).—Prize, Capt. W. W. Hornby, R.N., Knowsley, near Prescot.

SPANISH.—Prize, Capt. W. W. Hornby, R.N., Knowsley, near Prescot. Highly Commended, S. H. Hyde, Moss Cottage, Ashton-under-Lyne; J. Parsons, Audenshaw, Manchester. Commended, J. Richardson, Timperley, Altrincham. (A good class.)

GAME.—Prize, D. Parsons, Cuerden, near Preston.

COCHIN-CHINA.—Prize, T. Stretch, Marsh Lane, Bootle, near Liverpool (Buff). Commended, T. Stretch, Marsh Lane, Bootle, near Liverpool (Partridge); T. Burnett, Hutton, Preston.

HAMBURGH (Golden-pencilled).—Prize, T. Rigby, Fenny Wood, Over, near Middlewich.

HAMBURGH (Silver-pencilled).—Prize, T. Rigby, Fenny Wood, Over, near Middlewich.

HAMBURGH (Golden-spangled).—Prize, S. H. Hyde, Moss Cottage, Ashton-under-Lyne.

HAMBURGH (Silver-spangled).—Prize, W. Pierce, Hartford, Northwich. Highly Commended, J. Robinson, Vale House, near Garstang.

POLANDS (Black with White Crests, and Golden or Silver).—Prize, J. Robinson, Vale House, near Garstang (Silver Poland). (An indifferent class.)

BANTAMS.—Prize, T. Johnson, Halton Grange, Runcorn (Game breed). Commended, E. Musgrove, Aughton, near Liverpool; Capt. W. W. Hornby, R.N., Knowsley, near Prescot.

ANY OTHER BREED.—Prize, J. Robinson, Vale House, near Garstang (White Dorking).

GEESE.—Prize, Capt. W. W. Hornby, Knowsley, near Prescot. Highly Commended, T. Brownhill, Hope Terrace, Gorton, near Manchester; T. W. Swinton, Marston, near Knutsford.

DUCKS (Aylesbury).—Prize, T. Burnett, Hutton, Preston. Highly Commended, J. Wood, Moat House, Haigh, near Wigan. Commended, T. Rigby, Fenny Wood, Over, near Middlewich; S. H. Hyde, Moss Cottage, Ashton-under-Lyne. (A superior class.)

DUCKS (Rouen).—Prize, R. Serjeneson, 16, Tabley Street, Liverpool.

DUCKS (any other breed).—Prize, T. W. Tatton, Wythenshawe, Northenden (White Call). Commended, T. W. Tatton, Wythenshawe, Northenden (Brown Call); W. S. Ledger, Grove House, West Derby, near Liverpool (Call). (A very excellent class.)

TURKEYS.—Prize, Capt. W. W. Hornby, R.N., Knowsley, near Prescot. Commended, J. Longton and Son, Woolton Hill, near Liverpool (Wild American).

YOUNG POULTRY.

GOSLINGS.—Prize, Capt. W. W. Hornby, R.N., Knowsley, near Prescot. Highly Commended, W. Bradshaw, Slade House, Levenshulme, Manchester; W. T. Pownall, Yarwood Heath, near Altrincham (half-bred Spanish); T. Johnson, Halton Grange, Runcorn (Grey); T. Brownhill, Hope Terrace, Gorton, near Manchester. (An unusually good class.)

DUCKLINGS.—Prize, E. Lister, Cassia Lodge, Northwich, Cheshire (Aylesbury); Highly Commended, J. Robinson, Vale House, near Garstang (Aylesbury); J. Longton and Son, Woolton Hill, near Liverpool (Rouen); S. H. Hyde, Moss Cottage, Ashton-under-Lyne (Aylesbury). Commended, B. L. Sykes, Breck House, Poulton-le-Fylde (Aylesbury).

DORKINGS.—Prize, Capt. W. W. Hornby, R.N., Knowsley, near Prescot.

SPANISH.—Prize, S. H. Hyde, Moss Cottage, Ashton-under-Lyne.

Highly Commended, T. Davies, jun., Wavertree Nursery, near Liverpool; S. H. Hyde.

GAME.—Prize, R. Serjeneson, 16, Tabley Street, Liverpool. Commended, Capt. W. W. Hornby, R.N., Knowsley, near Prescot; J. Crisp, Knowsley, near Prescot; J. Turner, Radcliffe, Bury, Lancashire.

COCHIN-CHINA.—Prize, T. Stretch, Marsh Lane, Bootle, near Liverpool (Buff). Commended, E. Musgrove, Aughton, near Liverpool; Capt. W. W. Hornby, R.N., Knowsley, near Prescot.

HAMBURGH (Golden-pencilled).—Prize, W. Pierce, Hartford, Northwich. Highly Commended, R. Valiant, Poulton-le-Fylde. Commended, S. Kay, Longfield, Langley, near Middleton, Lancashire.

HAMBURGH (Silver-pencilled).—Prize, W. Pierce, Hartford, Northwich.

HAMBURGH (Golden-spangled).—Prize, S. Fielding, Fogg Lane, Middleton, Lancashire. Highly Commended, N. Marlow, Denton, near Manchester.

HAMBURGH (Silver-spangled).—Prize, J. Robinson, Vale House, near Garstang. Highly Commended, J. Booth, Failsworth, Manchester. Commended, C. Andrew, Taunton, Ashton-under-Lyne.

ANY OTHER BREED.—Prize, J. Robinson, Vale House, near Garstang (White Dorking). Commended, J. Robinson (Black Hamburg); W. Copple, Knowsley, near Prescot (Black Cochinchina); T. Burgess, jun., Burley Dam, near Whitechurch, Salop (White Dorking).

EXTRA STOCK.—Highly Commended, J. P. Jones, Handsworth, near Sheffield (Silver-pencilled Hamburg); R. Bell, Mosbro' Hall, Rainford, near St. Helens (Muscovy Ducks); T. Rigby, Manchester Road, Southport (Booted Coloured Bantam); T. Rigby (White Silky).

A SUNNY RUN ESSENTIAL.

HAVING some local reputation as a breeder of fowls, partly because I have occasionally taken prizes at the leading Shows, but mainly because I have always kitchen produce from my poultry, enough and to spare, I am occasionally called in by my neighbours, as a consulting physician, when chickens die, or hens refuse to lay the number of eggs expected from them.

To readers of *THE COTTAGE GARDENER*, it is not now necessary to say that, be the breed what it may, without cleanliness, regularity, and variety of food, no success can possibly be attained. One other little essential to success I hope to be allowed to mention,—a very little thing, but one that, if neglected, will frustrate all our pains,—have your poultry runs a light and sunny aspect? If they have not, no abundance of winter eggs will be produced. I have just returned from visiting a friend, to whom, for three successive years, I have sent eggs from a favourite variety of Cochins, which, with me, are the most prolific layers from Michaelmas to Easter. I sent eggs to my friend in March, 1855, and confidently expected I had started him with every prospect of success. Late in autumn, I visited him, and found his birds half the size of mine of like age. I inquired into his method of feeding, and suggested an improvement in that department. In spring, 1856, I heard that his poultry were not healthy. He asked for fresh eggs from me; I sent them. On paying my yearly visit the next Christmas, I found the birds of fair size; but not one of the pullets had begun to lay.

As my own April pullets always lay by November, I was surprised, and inquired into the feeding and lodging of my friend's birds. I found feeding and lodging were both good; the soil was dry; and I could not explain the tardiness of the pullets in completing their plumage and commencing their laying season. Presently, it struck me that the yard in which they were was overshadowed by the house and buildings, and that, during autumn and winter, the sun could hardly shine into it at all. I pointed this out to my acquaintance, and suggested that a small run should be enclosed with wire in the kitchen garden, in such a place, that every sunbeam of the winter quarter should fall freely upon it. He adopted my suggestion, and now he reports that his birds last winter laid most regularly, and were invariably healthy. In short, he is now as sanguine as he was once desponding. The birds last winter had no better food, less space, and a worse house than in previous seasons, yet they thrived better. It can only be explained by the invigorating effect of direct sunlight.

I hope some unsuccessful reader of your pages may gather from this little story a hint which may conduce to his better luck in the coming winter. Of course, those whose birds have ample range need not trouble themselves to provide such a place. Their birds know what they want, and will find it for themselves. Those whose birds are always confined should know, that without sun the poultry will be neither thrifty nor prolific, feed them as they may.—K.

TUMBLER PIGEONS.

WHATEVER we have a liking for, we at all times evince a willingness to converse about, seldom allowing an opportunity to pass that would give us the pleasure of describing the utility, charms, or habits of our favourites. Indeed, were I to remain indifferent to the solicitation of Mr. B. P. Brent, in imparting what knowledge I have, either of the house or air Tumbler Pigeon, I should feel myself guilty of ingratitude to that bird.

In my boyish days the Tumbler Pigeon attracted my attention, and with it are associated many of the incidents of that time. Since then it has been to me like some immovable prejudice, and,—when, in flying from place to place, it seems as if measuring the distance between into lengths of five feet apart by its easy and graceful somersaults, or in performing on floor or table nine or ten well sustained tumbles in twelve seconds,—it has charms for me still.

I am sorry that I cannot furnish Mr. B. P. Brent with any reliable information as to the origin of the house Tumbler. The first I knew to have this variety was the late Mr Greg, of Glasgow; but whether he bred, or how he came to be possessed of them, perhaps some of those who were on intimate terms with him may be able to inform us.

The house Tumbler has no peculiar marking. The colour is various, but the most common are brown, brown and white, ash, black, blue-barred, and yellow; size, between that of the short-faced Tumbler and the common Pigeon; head, when compared with the short-faced bird, long and coarse; length of beak, from four to five eighths-of-an-inch; colour of the eye, mostly pearl. If properly attended to, and supplied with all that is necessary for birds kept in confinement, they breed well.

“A WELSHMAN,” whose taste in Pigeons is somewhat akin to my own, perhaps may be pleased to hear what kind of flying Tumblers we, in this part, esteem most. In the first place, the bird is not much thought of that tumbles less than forty times in a minute; secondly, the style in which these tumbles are performed has much to do in making him or her a favourite. We do not want our birds to make three somersaults at a time, and then fly on again. What we want is, the moment they take wing, to go over, and to continue to do so (one at a time, so smoothly done that one who is unaccustomed to look at these birds in flight would not know that they were tumbling at all), at regular intervals, until they drop. The cleaner the intervals the better, if the bird can keep from sinking. For my own part I do not think a bird worth keeping that does not go over thirty times in a minute.

—JAMES PATON, *Stewarton*.

PIGEONS.

IN reply to the inquiries of “A WELSHMAN,” I may say, that though I have never made a comparative trial of the Runts and smaller Pigeons, as to their culinary qualifications, yet the French, who are acknowledged as good judges in the epicurean arts, prefer the large house Pigeon, or Runts, to the smaller sorts.

When billing, or “wringing beaks,” the hen always places her bill in the cock’s, and he appears to feed her with a spasmodic retching movement, but with his most passionately retching kisses. I do not think he ever gives her more than a little saliva, though the action sometimes much resembles the act of vomiting the food when feeding young ones.

A gentleman, who had tried the experiment, informed me he had taken the eggs of the Wood Pigeon (*Columba Palumba*), and placed them under his Pigeons in the dovecot, and put the tame Pigeon’s eggs in the nest of the Wood Pigeons; that each had reared their respective charges; but the young Wood Pigeons, when old enough, had taken to the woods, and the young tame Pigeons joined those in the dovecot. It is owing to the roving nature and arboreal habits of the tree-perching Doves that prevents their being domesticated.

Although a lover of the flying fancy,—and as such regarding high flying and clean tumbling as the highest qualifications of a Tumbler,—yet I do not think those qualities are alone sufficient; for instance the first Pigeon I ever had was a black-headed Nun, he was at one time paired with a short-faced

Tumbler, and their produce (black mongrels) used to tumble very nicely. An acquaintance of mine had a common-looking blue-pied Pigeon which also used to soar and tumble beautifully; and a London pigeon-fancier told me he had a blue Dragoon cock that used to tumble. Although these birds did actually tumble, I should object to their being taken as a type of the breed called Tumblers: we must have other properties of head, beak, size, feather, &c.; but the standard need not be so high or excessive as for the high-bred short-faced birds. Mr. J. M. Eaton, in his book which I have before alluded to, ridicules my advocating a medium bird for flying and tumbling. He says, “fanciers will not have them;” they must go to extremes. But he acknowledges the pleasant short-faced birds do not tumble; nor do the long-faced Skinnum Beards. As to Dutch Rollers, they are coarse, runtish-looking birds; and, even if bred to feather and flying, their excessive tumbling, or rolling, causes them to break the flight, lose ground, and bring down the others. It, therefore, stands to reason, that those who, like myself, enjoy a good flight of Tumblers, must have medium birds, better looking than the Rollers, and not so delicate as the short-faced, Almond-bred birds. Mr. Eaton regrets that these pleasant birds do not tumble, and he admits his admiration of a flight of Tumblers, by informing us in the pages of his interesting work how, when once going to Wales, he went without his dinner by watching a flight of Tumblers tumbling beautifully, and he declares he is willing to do so again for another such sight.

Whole coloured birds,—as blue, black, and white,—are regarded as the original English Tumbler. Are those of “A WELSHMAN” likely to be of the old English breed, unmixed with the gay-coloured Dutch?

What are now called Dutch Rollers, I think, are very coarse German Tumblers.—B. P. BRENT.

MALFORMATION OF A RABBIT.

A FRIEND of mine called my attention, some time since, to a very curious phenomena in one of his Rabbits, which has growing from, and outside its under jaw, two, what I shall call teeth, though they have really more the appearance of horns. These turn up over the nose, and when I saw them they were about one inch and a half long. They are about the size of a straw, nearly square, and about a quarter of an inch apart at their extremities. As you will suppose, this animal had great difficulty in getting its food into its mouth; but they were cut off with a file a day or two after I saw them, and were found entire solid bone. So fast do they grow, that the owner has again taken off another half inch, in about six weeks from the first cutting. Is not this a rare occurrence, and very uncommon? I should feel obliged by any information respecting this.—G. C.

OUR LETTER BOX.

COCKERELS WITH CROOKED BREAST BONES (B.).—We have a strong opinion that the form of the perch, or the mode of roosting, has but little influence over this. Like spinal curvature in the human body, it arises from constitutional weakness, and comes from too close a relationship in the parents, or from weakness in one or other of them. Try a change of parentage.

LICHFIELD POULTRY SHOW.—J. P. J., *Bantam*, and others, write for information as to the Secretary’s name and address. Why do not the Committee advertise it?

CREWE POULTRY SHOW (*Bantam*).—We cannot say whether the same are managers this year as were last year.

M. S. Y.—We have a letter for this correspondent, whose communication appeared under the title of “Help Me, my Friends,” but we have lost his address.

LONDON MARKETS.—SEPTEMBER 13TH.

POULTRY.

The only novelty to note is the beginning of the Partridge season. Judging from appearances, they are plentiful, and generally good, forward birds.

	Each.		Each.
Large Fowls ...	4s. 6d. to 5s. 0d.	Leverets.....	2s. 0d. to 3s. 6d
Small ditto.....	3 0 „ 3 6	Grouse.....	3 0 „ 3 6
Chickens.....	2 0 „ 2 6	Pigeons.....	0 8 „ 0 9
Geese.....	6 0 „ 6 6	Rabbits.....	1 3 „ 1 4
Ducks.....	2 6 „ 3 0	Wild ditto.....	0 8 „ 0 9

WEEKLY CALENDAR.

Day of Mth	Day of Week.	SEPTEMBER 21—27, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R. and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
21	TU	ST. MATTHEW.	30.260—30.197	72—43	N.E.	—	46 af 5	59 af 5	29 af 3	14	6 56	264
22	W	Browallia elata.	30.191—30.159	68—47	N.E.	—	47 5	58 5	46 4	15	7 17	265
23	TH	Browallia speciosa.	30.088—29.958	74—42	E.	.01	49 5	56 5	rises	☺	7 38	266
24	F	Brugmansias.	29.852—29.778	73—51	S.W.	.12	51 5	54 5	4 6	17	7 59	267
25	S	Brunsvigia toxicaria.	29.860—29.775	72—45	S.	.14	52 5	51 5	19 6	18	8 19	268
26	SUN	17 SUNDAY AFTER TRINITY.	29.931—29.836	69—48	S.W.	—	54 5	49 5	42 6	19	8 40	269
27	M	Cacalia articulata.	29.925—29.824	71—50	S.W.	.12	55 5	47 5	11 7	20	9 0	270

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 65.9° and 45.3°, respectively. The greatest heat, 82°, occurred on the 25th, in 1832; and the lowest cold, 26°, on the 26th, in 1855. During the period 110 days were fine, and on 707 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

ARTICHOKES.—When the heads have been gathered, cut down the remaining part of the stems, to encourage the growth of shoots from the bottom, before winter.

CABBAGE.—Continue to plant out, as advised last week.

CAPSICUM.—The large green pods to be exposed to the ripening influence of the sun, and to be gathered when there is any apprehension of frost.

CARDOONS.—When the plant is two or three feet high, tie the leaves loosely together with hay or straw bands; then dig and break the ground, and earth-up round it a foot or more high, or two-thirds of the stem, to receive a final earthing next month. It is a vegetable in great repute on the Continent, where it is used for stewing, and for soups and salads, in autumn and winter.

CARROTS.—Thin the autumn-sowing cautiously, and keep them free from weeds. If the main crops are attacked by grubs, the sooner they are taken up, when full grown, the better.

LETTUCE.—If they are wanted for winter use, plant some of the *Cabbage* kinds, in frames, in light soil, being careful that the drips from the lights do not fall upon them. Some of the *Cos* kinds to be pricked out on a sheltered border, before they are finally planted, to remain through the winter.

ONIONS.—Thin the autumn sowing where they are too thick, and plant the thinnings on a warm border. Pull up the main summer crops when they have done growing, and house them when dry.

PARSLEY.—A portion of the spring sowing to be cut down, when a more tender and useful crop will spring up again before winter.

TURNIPS.—Attention to be given to the thinning and hoeing of the earlier sowings. The tops of such as are too late for bulbing will be useful in the spring.

FRUIT GARDEN.

APPLES and PEARS.—Carefully look over all that have been gathered within the last fortnight, and remove all that are bruised or injured, and have begun to decay, before they infect the others.

FILBERTS.—To be gathered when ripe, and packed firmly in small or middle-sized stone jars, when the kernels will keep plump and sweet till the spring.

FRUIT-TREE BORDERS.—Remove rubbish of all sorts from them. No obstacles should be allowed to prevent the roots participating in the advantages accruing from favourable weather. Where it is intended to plant this season, the ground to be prepared at the earliest convenience, and thoroughly exposed to the action of the weather, so as to have it in a mellow state when wanted for use.

PEACH TREES.—Go over, and remove the shoots that had borne fruit, but have no terminal wood shoot.

Those remaining will be benefited by the removal, as they cannot be too open at this season.

STRAWBERRY BEDS.—Clear from weeds, and cut away all the runner strings, keeping the plants separate, so as to ripen well.

FLOWER GARDEN.

BEDDING PLANTS.—Lose no time in getting the stock for another season potted. Collect the leaves as they fall; they will be useful if a little bottom heat should be wanted to excite into action the roots of late-struck cuttings, or of any favourite plants taken up out of the open ground.

BULBS.—See that these, and the spring-flowering plants, are in good condition for turning into the beds, when the summer and autumn-flowering plants are over.

CHINA ROSES.—Cuttings, that are rooted, to be planted out in the reserve ground, or potted off.

CHOICE PLANTS, that have been bedded out, and are worthy of preservation, should be taken up, and re-potted; only the straggling and ill-placed shoots removed; to be shaded, and kept close, until they have made fresh roots. If their removal is postponed until they are touched by the frost, the extra trouble and uncertainty of saving them should induce early attention to their preservation.

DAHLIAS.—Thin the weak shoots; tie up the branches, and shade the best flowers.

WILLIAM KEANE.

FLOWER SHOW AT THE CRYSTAL PALACE.

SEPTEMBER 8 AND 9.

(Continued from page 375.)

COLLECTIONS of Verbenas, Achimenes, Gloxinias, cut flowers, and scores of odds and ends, were passed, with a few pickings,—such as *Brilliant* Verbena, a pot plant, deep scarlet, and a purple shade round a very small eye; a good *Disa grandiflora*, from Mr. Gedney, with three large blooms,—the most difficult plant in the world to manage; *Pine-apple Thistle*, the queerest sport yet seen,—first three or four joints and leaves on a little stem, then a flower converted to the size of a Hazel-nut, but quite succulent, and out of this a few Thistle leaves, just like the crown of a Pine-apple. There was a collection of illustrated Begonias, from Mr. Fletcher; a fine *Dichorisandra ovalifolia*, with larger leaves and better flowers than those of *thyrsiflora*,—purplish-blue flowers: it was from this neighbourhood,—from Mr. Lewis, gardener to J. Guy, Esq., Hampton Wick, who also opened the ball with the largest and best-grown Scarlet Geraniums; but they were not judged when I passed. The kinds were—*Magnum Bonum*, the best for beds at Hampton Court,—it was four feet across; *Cerise Unique*; *Duke of Cornwall*, which is the third form that the *Emperor*, or *Shrubland Scarlet*, takes from

seeds; *Trentham Rose*, which was wrong,—properly, it was *Trentham Scarlet*; but the tallics might have been changed, for *Trentham Rose* stood just above, with the wrong name of *La Titien* for *Le Titian*.

Mr. Conway next, with *Royalist*, *Cerise*, *Master-piece*, one of the best bedders of that section; *General Pélissier*, the best pot plant of the same race; *Brillante*; and a rosy kind, wrongly named *Cherry Cheek Improved*. It is not even of the same race as *Cherry Cheek*.

Mr. Summers, gardener to A. Mongredien, Esq., Forest Hill, stood next, with *Cerise*, *Beauty of Chepstow*, *Tom Thumb*, *Trentham Scarlet*, somebody's *Queen*, and a real *Pink Nosegay* at last. I never saw or heard of it before. There were excellent plants in the next collection, but so misnamed, and the names so badly spelt, that charity compels me to withhold the names of the gardener and master.

Mr. Brown, gardener to J. C. Thurn, Esq., Dulwich, stood next for BEDDING GERANIUMS, and had a prize for *Pink Pet*, *Punch*, *Master Squires*, *Tom Thumb*, *Cerise*, and *Kingsbury Pet*,—all nice plants. Mr. Elliot, gardener to Mr. Barnes, Lower Sydenham, had the next lot, of which the *Cottage Maid* was different from the above. Mr. Lavey, gardener to E. A. De Grave, Esq., Fetcham, Surrey, stood next. He had *Shrubland Dwarf* and *Frogmore Improved*, different,—the dwarf quite true. I should like to have it, as it is four times better at Shrubland Park than *Tom Thumb*. Mr. Reid, gardener to J. Hunt, Esq., Sydenham, came next. He had *Bigley's Queen*, *Mr. Rickets*, different,—all nice plants. Mr. Walters, gardener to J. Moore, Esq., Sydenham, next. He had the best kind of *Scarlet* there—the *Beckenham Scarlet*; but some others were bad kinds. After him Mr. Halley, with five or seven plants in one pot; but some of the gardeners were just as unscrupulous. Mr. Durant, gardener to R. Hutchinson, Esq., had the first prize, with *Brillante*, *Le Titian*, *Tom Thumb*, *Cerise*, *Trentham Rose*, and *Punch*,—not the true *Punch*, but one of its seedlings. Mr. Gray, gardener to W. Ricardo, Esq., next, but none different. Mr. Weatherhill next. He had *Little David*, a dwarf *Tom Thumb*; *Scarlet Perfection*, a green *Horseshoe*; *Queen of England*; and *Punch*, but not true.

Now, all these beautiful plants were so much of love's labour lost. *Pink Pet* and *Kingsbury Pet* were the only two kinds of pot plants in the whole lot; the rest were bedders, and not one quarter so telling as the vases of *Tom Thumb* out of doors. But I forgot to speak to Sir Joseph Paxton about showing bedders not trained, nor less nor more than six plants of one kind in one box, and the exact size of the box to be given. Whoever transgressed that rule should be disqualified. I hope Mr. Grove, the secretary, will point out this suggestion to "the gardener's best friend."

Three splendid nosegays of VIOLETS, from John Newton, Thornton Heath, Croydon, should have been sent to Balmoral, to Her Majesty, they were so deliciously sweet.

Mr. J. C. Schmidt, of Erfurt, in Prussia, well known among Stock growers here, had an entire new feature in the nosegay line, which attracted very general attention, and deservedly so. His are NOSEGAYS of EVERLASTING FLOWERS, and of flowers and moss, "dried by an entirely new process, which renders them durable for years." His only agent in England is Mr. Herrmann, of Ann's Place, Walthamstow, Essex. In taste of make, these nosegays are far superior to Covent Garden make. They are just the things for the dinner-table and the drawing-room in the dead of the winter, but not quite so good as those we have made thousands of at Shrubland Park.

In the Miscellaneous, the Messrs. Jackson had a handsome prize for a fine specimen of *Berberis trifurcata*, exhibited in bloom for the first time in Europe. It had a tassel of thirteen upright flower-spikes, of deep orange yellow, and from four to six inches long on the top of the leading shoot. It will not seed, and it was in bloom a month before the Show. It is worth knowing, that seeds of this Eastern broad-leaved *Berberis* will vegetate in ten days, if sown as soon as ripe, while the seeds of some kinds take from six to twelve months to sprout.

Miss Dolphin, of Sydenham Hall, had an unworthy prize for the best and scarcest bulb in Europe,—a bulb which was never before exhibited, in public, in England. But we have no judges of rare bulbs. This was *Vallota purpurea major*, and I doubt if there were two gardeners at the Show who ever saw it before. The name is in everybody's mouth, and in every bulb list, but I question if there is a bulb of it on sale in Great Britain. The one which is sold for it, and which goes by its name, is the kind which was in Mr. Carson's collection. But the two are as different as the two kinds of *Amaryllis Belladonna*. This had two strong flower-stems, and eight flowers on each. The common *Vallota* has never more than six, and oftener four or five.

Mr. Summers, gardener to A. Mongredien, Esq., Forest Hill, had a prize for a collection of mixed SUCCULENTS, chiefly Cacti.

But the greatest novelty was the HYBRID ORCHIDS, from the Messrs. Veitch. A cross from *Calanthe ve-ratrifolia*, by the pollen of *C. Masuca*, is the best of them. It shows exactly what takes place in other tribes when the pollen of a coloured flower is applied to a white one,—the white takes very nearly the tinge of the pollen parent. The peculiar purple of *Masuca* is the colour of this cross, but the habit and stature is that of the mother. It is called *Dominiana*, after their foreman, who does these wonders. There were also three kinds of cross *Cattleyas*, between *granulosa* and *Harrisonia*. They are not so fine as either of their parents, but they may increase in beauty as they get older and stronger. There is not the slightest doubt about *Oncidiums*, *Dendrobiums*, *Epidendrums*, and all the great families, sporting like *Calceolarias*; nor that nine-tenths of the pride of botanists, the species, are mere seedling varieties, which varieties get fixed in time by local influences. There is not such a thing in nature as a species, as meant by botanists. The *Shrubland Scarlet* Geranium will produce three distinct species, and each of the three will reproduce the same, but neither of them will give a variety, and I know twenty kinds of *Scarlet* Geraniums which will come as true from seeds as Barley and Oats. They had also a lovely plant of *Lapageria rosea*, trained in their own original parasol fashion, the flowers hanging down from the rim of the parasol as thick as they could stand. The present fashion of hiding young ladies faces, by the dangles from the rim of their hats, is a hybrid between the training of the Messrs. Veitch and the Sultan's scruples.

But I must leap, for want of room, and see the FUCHSIAS, where Mr. Webb, gardener to H. Walmsley, Esq., Tulse Hill, took the best prize, with the afore-said *Marquis of Bristol*, *Pearl of England* being on his right and the *Duchess of Lancaster* on his left, or rather on my left. Directly behind him, and much hidden by his bulk, stood my own favourite Fuchsia, *Venus de Medici*, having *Inaccessible* on her left and *Nil Desperandum* (a climber) on the right.

Mr. Oubridge, gardener to J. Foster, Esq., Stamford Hill, was second. He placed them two and two, thus—*Venus de Medici* and *General Williams* in front, *Prince Albert* and *Clio* next, and *Autocrat* and

Glory last,—capitally done; otherwise the *General* should have stood with *Glory*, instead of that bewitching *Fuchsia*, *Venus de Medici*.

Mr. Gaines was third, with *Voleano de Aqua*, *Snowball* (a trailer); *Christabella*, a yellowish kind; *Charlemagne*, *Conqueror*, and *Venus*.

Mr. Cross, gardener to Lord Ashburton, was fourth, his two best being *Wonderful* and *Autocrat*.

The JAPAN LILIES were most numerous: Mr. Gaines had the largest plants, but others were better bloomed. Mr. Laybank, gardener to T. Maudslay, Esq., Lower Norwood, took the first prize; after him coming Messrs. Mathews, Gaines, Brown, and Higgs.

Mr. Carson had the prize for a collection of IXORAS,—fine, large, healthy, well-bloomed plants.

The HEATHS were not extra. Mr. Rhodes and Mr. Peed divided the spoil among the heather, as did the Messrs. Veitch and Gedney over their Pitcher Plants.

Some of the BALSAMS were good, and some worthless. Mr. Green was first, Mr. Brown second, and Mr. Parker third.

The CHINA-ASTERS were very good, and two or three times more of the French (tasselled) than of the German strain (quilled). For French, Mr. Sandford, gardener to T. Thomasset, Walthamstow, was first; Mr. Monk, Tottenham, Middlesex, second; and Mr. Brown, third. There were also extras. The first stand of them was the only one in which the blooms were thoroughly well matched. Did Mr. Sandford raise them himself in Herefordshire? The best growers of French Asters are down in Berkshire. Thus, Mr. Daniel Lewis, East Hendred, Berks, first; second, Mr. F. Besley, East Hendred, Berks; third, Mr. Thomas Westbrook, Abingdon, Berks. But I lost three or four more bests.

The CUT ROSES looked better than they do in June. In the amateur class, Mr. Hudson, gardener to F. Barchard, Esq., Uckfield, Sussex, was first, with fifty. Mr. Blake, gardener to T. Green, Esq., Ware, Herts, second; Mr. Terry, third; and Mr. Hollingworth, Maidstone, fourth. The nurserymen (in fifties) stood thus:—Messrs. Paul, Francis, Mitchel, and Lane. For twenty-four blooms—Mr. Hudson, first; Mr. Francis, second; and Mr. Kimbersley, Stoke Nursery, near Coventry, third.

The HOLLYHOCKS stood up in a long row behind the DAHLIAS,—a capital arrangement. The greatest novelties were at one end, but the fattest were in the middle, and they took the first prize to Mr. Chater, of Saffron Walden; Messrs. Paul and Son, second, with many good new faces; and Mr. Bragg, third. But they were so close that it must have been a ticklish game to judge them.

DAHLIAS.—Of course, they were the best of all, and I never saw them so put up, without wishing in my heart I was a florist. Indeed, I am a florist at heart; but I want Rarey's plan of taming my horse, for I could never get him to carry me up in face of their instruments and cooking utensils, and it would be impossible for me to walk it. I saw, however, that I could judge a flower-garden Dahlia better than they. I would engage to give up my reins, if they gave the best prizes to the best seedlings at this Show. In two years time, my favourite flowers will attract the public, when none but a florist will buy the prize plants of that Show. But let us see!

For the best fifty old strain, Mr. Turner came in first, as usual; Mr. Keynes, next; Mr. Legge, Lower Edmonton; Mr. Kimberley, Stoke Nursery; Mr. Bragg, Slough; and Mr. J. Walker, Thane, in that order. For twenty-four blooms, ditto, Mr. Dodds, Salisbury; Mr. Charles Fellows, Shottesham Rectory; Mr. G. Holmes, Brooke Lodge, Norwich; Mr. Grant Shottisham Park, Norwich; Mr. W. Barnard, High

Street, Epsom; Mr. Leslie, Ramsgate; and Mr. Derry, Norfolk, last of all.

FANCY DAHLIAS, which I like best, will soon be up in all the points. It was just as good as a play, to study why Mr. Keynes took the cream out of Mr. Turner's spoon. Both lots were placed side by side. Mr. Keynes had *Jesse*, *Oliver Twist*, *Mark Anthony*, *Charles Perry*, *Cosmos*, *Lady Paxton*, *Favourite*, *Triomphe de Roubaix*, *Carnation*, *Duchess of Kent*, *Conqueror*, and *Eugénie*. The best in Mr. Turner's were—*Lady Paxton*, *Duchess of Kent*, *Oliver Twist*, and *Elizabeth*.

The best SEEDLING DAHLIAS were—*Golden Drop*, very large clear yellow; *Dandy*, a fancy gray, made up of purple, black, and white, *Carnation* and *Picotee* fashion; *Rosebud*, the best Rose there, yet without a prize; *Mrs. Keynes*, and *William Dodds*, two other Roses, but not so good as *Rosebud*. Who were the Judges? or, which of the three will be the best three years hence?

FRUIT.—PEARS and APPLES, under the Handel Organ.—Six dishes, of twelve fruit each. First, Mr. Harrison, Palace Garden, Oatlands, with *Hacon's Incomparable*, *Duchesse d'Angoulême*, *Marie Louise*, *Bon Chrétien*, *Beurré Diel*, and *Gansel's Bergamot*. Second, Mr. Halley. Third, Mr. Frost, Preston Hall. Mr. Frost had the heaviest Pear. There was a hitch here: I could see no second prize. Mr. Whiting, with a splendid lot, had no mark when I noted. But there was some confusion, misjudging, and misplacing of collections contrary to the schedule, which might be the cause of misjudging. No judge is worth trusting with his own gloves, unless he has nerve enough to stick close to the schedule. One fruit more or less in one dish, or one dish more or less than what is specified in the schedule, ought to disqualify the best gardener in England, and the best dessert that ever was dished. But I saw a first prize given to a gardener who smashed every word of the rule under which he entered. His fruit were the best, it is true; but that should not screen him. It is most awkward to be Judge in such cases, and the authorities of these Shows must either give up their rules, or else make the Judges stick to the letter of the law. I have every one of the awards noted, and the dishes and number of dishes in all the collections, but I shall not record such bungling. I shall name the principal Pears and Apples, to let far-off people see what kinds were shown.

Of PEARS.—*Marie Louise*, *Winter Crassane*, *Chau-montel*, *Williams's Bon Chrétien* (very numerous and ripe), *Louise Bonne*, *Summer Bergamot*, *Gansel's Bergamot*, *Ambrosia*, *Madeleine* (small, roundish, and ripe), *Jersey Gratiote*, *Beurré Rance*, *Beurré de Capiaumont* (very near ripe), *Beurré Spence*, *Duchesse d'Angoulême*, *Calebasse*, *Catillac*, and a few others.

APPLES.—*Dutch Codlin*, *Emperor Alexander*, *Hollow-eyed Pippin* (called provincially *Holland Pippin*), *Shepherd's Seedling* (after the looks of *Stone Pippin*), *Alfriston*, *Woodstock*, *Golden Noble*, *Red Quarrenden*, *Hick's Fancy*, *Downton Pippin*, and its brother, or sister, *Yellow Ingestrie*, *Fearn's Pippin*, and a few *Pearmains* made up the staple.

Fine Lemons and Oranges, from Mr. Williams, gardener to Mrs. Warner, Hoddesdon; a corrugated or warted Citron, called *Cidratii*, from Mr. Bragg, gardener to J. B. Lousada, Esq., Sidmouth, the first time any of this kind was exhibited in London,—it is a splendid-looking fruit. Mr. Solomons, of Covent Garden, had some noble foreign fruit, chiefly Apples and Pears. A small, very black Grape, called *Labrador*, was new to me. Also, Mr. Snow's *Hamburgh Museat*, one bunch grown in a Peach house, one in a vinery, and the third bunch from a pot, and all of them ripe two months before the Show,

telling how well they keep. Our readers heard the good opinion of Mr. Fish on this most excellent Grape; and there was a white *Black Hamburgh Sweetwater* Grape, called *Buckland's Sweetwater*, from Mr. Ivory. It looks exactly like a *Black Hamburgh*, but white; and, at the risk of being locked up for the night, I picked a tasting, and I found it was really a new *Sweetwater* Grape, a *Glout Morceau* of a thing. My own puzzler Grape at home proves exactly the same experiment as last year; and next year, if I live, I shall challenge England, and Mr. Rivers, to produce such another.

The PEACH and other FRUIT TREES were from the orchard houses of the Messrs. Lane and Lee. The *Shanghai* Peach, in Mr. Lane's, was the most remarkable,—a large, plain, dull, yellow fruit, with a deep furrow all round it. Mr. Page, gardener to W. Leaf, Esq., Streatham, had four Black Grapes, in pots, trained after Mr. Veitch's fashion, the bunches hanging down under the parasol, and all the leaves just over them. This is by far the prettiest way of training them, to stand on the dessert or side table.

D. BEATON.

MUSHROOM CULTURE SIMPLIFIED.

I PROPOSE to give here directions of the most simple kind, adapted to all who possess a shed, stable, or outhouse of any kind. They will be founded on the well-known general habits of this singular vegetable. As for gardeners, they seldom need such directions. I am doing this in consequence of several applications I have had from persons ignorant of general gardening. But, in truth, the same conditions are requisite to the successful culture of the Mushroom everywhere.

The first thing to chat about is *situation*. We all know that they are produced abundantly in the open fields; and, before we enter upon the question of artificial culture, it will be well to inquire into the condition by which they are produced in such situations. It will be found that rich soils, which have been long under a pasturage system, are eminently productive of them; the plough may, therefore, be considered an enemy. The old pasture lands of Cheshire are noted for them; and a dry May or June is almost sure to be succeeded by a plentiful crop. In cow pastures this may be noticed especially, and the reason I take to be as follows:—The cowdung becoming encrusted, forms a kind of macintosh coating, and this, excluding the rain, the spawn has every chance of being propagated under the condition it loves,—which is a tolerably dry one. We come now to situation; and I must, once for all, say, that anywhere in-doors, where the temperature never exceeds 75°, or falls down to 10° of frost, is eligible; and if rather damp, so much the better.

Darkness is also an advantage, as they are averse to a strong light; and, moreover, are whiter, and are preserved longer under these conditions. A shed, a cellar, a stable, a cowhouse, a barn, a factory building, or anything of the kind is eligible.

And as to the *form of the bed*, it is almost immaterial; they will grow in a garden pot, or even out of a hollow in a wall, boxes, &c., or might be done on the blacking-bottle and old-kettle system.

But as to *beds*, it is well to observe, that much danger exists of overheating; and it is safe to advise the amateur not to place the dung above nine inches in depth in any one part. In general, they may be made flat, as being by far the safest course.

The *material* comes next; and here we have nothing better than horsedung, fresh as possible from the stable door. This should be obtained before much rain falls on it, and be kept afterwards where it will be

safe from rains. The best plan is to obtain it weeks before wanted, and to spread it where it will gradually dry. In obtaining it, a little of the freshest strawy litter may be shaken out, but by no means too much. In any outhouse or stables it may be placed, and, being turned once, it will soon be ready for making into a bed. But we may find Mushrooms springing out of such materials as old thatch, when in a proper condition; they, however, do not long continue to produce.

Now we come to the *making of beds*. Such consists in simply treading or beating the dung as firm as possible: it cannot be made too firm or close. The depth I spoke of before. In any side of a stable, shed, or cellar, at liberty, it may be made, from two or three feet in width; or more or less, according to the space available. When made, it may remain for a week, to observe how it heats; for it may heat too much. The most desirable temperature at which to introduce the spawn is from 70° to 75°,—higher it must not be. But a bed of nine inches in depth, made of fresh dung, will probably rise to 80°, after being built a few days; it will thus remain about stationary, and then begin to descend. Therefore, with a beginner, a thermometer is necessary. Practical gardeners, however, only use a few trial sticks, thrust in: these they feel daily. In spawning the bed, it is simply necessary to make a few little holes a foot apart, and press in a lump of good spawn as large as a small Potato. The bed may now remain for two or three days, to ensure safety from overheating; it may then be covered with soil two inches in thickness, well beat down. It is well to cover it immediately with warm litter, four inches in thickness. This helps the working of the spawn, and preserves the surface moist.

I may now offer a few remarks on *spawn making*. Take the following recipe:—Half a bushel of good spawn will be enough for most amateurs; but, as there will be a waste in the making, take one peck of horse-droppings, one peck of cowdung, one peck of ordinary garden soil, and one peck of road scrapings. Knead them, by well mixing, treading, and thumping, and adding water until they are one uniform mass. Spread this material in a shed three inches in thickness; making the surface smooth. And now let the mass lay until it becomes firm enough to cut into "bricks;" the cakes of spawn are thus called, for they are generally the size of a common brick. When they are thus cut, they must be placed on edge to dry a little, and, when about half dry, must be impregnated with good spawn, already perfect. A small hole, as large as the top of a good-sized thumb, is made at each end of the brick, and little lumps of the real spawn crammed tight in. The bricks may now be piled in a heap in any warm corner in-doors; a temperature ranging from 60° to 70° will be right. It is generally covered up with an old mat or rug.

Good spawn must be well distinguished from bad; the latter is full of threads, like white roots; the former has a web so fine, that it sometimes requires a good eye to detect it. The former, in fact, may have been good, but has gone into the last stage,—that of producing, or having produced, Mushrooms; it is exhausted, or ready to become so.

I hope that these simple directions and explanations may be understood, and may prove serviceable. Although the description appears long, it will be found on examination that only a few points require to be carefully attended to. R. ERRINGTON.

A "BEE TRAIN" COLLISION.—As the brown heather is now in full bloom, clothing the moors with beauty, and inviting the busy bees to enjoy its sweets, several parties from

Shilden, Aycliffe, and neighbourhood, arrived at Bank Foot, Crook, on Tuesday morning, by "special bee train," on their way to the moors. On arriving at Bank Foot, the second fireman of No. 12 engine unloosed the couplings from the carriages, and the engine by some misunderstanding, before the breaks of the carriages and trucks could be properly applied, ran into some wagons at the foot of the Sunnyside incline. Several of the passengers were much bruised by the collision about the head and face, and many of the hives of bees were destroyed. It is estimated that nearly £100 damage was done. The hives of bees were so much shaken that on their arrival on the moors several of the hives were deserted. Passers-by at Bank Foot for some time had to be very cautious in avoiding the attacks of the winged *industrials*, thus so rudely driven from their habitations. The passengers returned safe by the evening train. The engineman and fireman have been fined.—(*Durham Chronicle*.)

VINERY, CONSERVATORY, AND STEAMING APPARATUS COMBINED.

HAVING occasion to go to Walton, near Chesterfield, a few days ago, I was told that the Rev. J. B. Jebb, of Walton Lodge, had recently had a double grapery and a conservatory erected on a first-rate principle, and heated by a boiler, which, when required, would steam Potatoes, or other roots, for cattle, at the rate of ten bushels per hour. Curiosity prompted me to go and see it, and I examined it rather minutely. I will now give you a description of it, as I think it may be useful to some of the readers of your widely-circulated paper.

The grapery and conservatory, I understood, was built by Mr. Wells, of Ullesthorpe, near Lutterworth, Leicestershire. The grapery is about 39 feet long and 13 feet wide, divided in two,—one 23 feet, the other 16 feet. It is a lean-to roof, without any sliding lights, consisting of bars $2\frac{3}{4}$ inches deep by $1\frac{1}{4}$ inch, and 11 inches between. The roof is supported by five angular iron girders, $1\frac{1}{2}$ inch wide, with scrolls to give it strength, running from the front plate to the back wall, and it keeps the roof as true out of wind as possible. It is ventilated from the wall plate in front, and at the top of the roof at the back, and is most efficient; and from its being simply a glazed roof, without any principal rafters or sliding lights, it makes the house, as it were, light itself.

It is heated by two rows of 4-inch pipes going round the Vine-border, which is inside the house, leaving a path 2 feet 6 inches wide at the back. The pipes are connected with the boiler by 1-inch wrought-iron tubes, and commence at the west end along the front, along the east end and the back to within 2 feet of the end; then return back. This is the first house. Then a flow and return pipe goes along, under the grating, on the path at the back, and connects with the 4-inch pipe at the west end of the second grapery, exactly the same as the first, with a stopcock to turn the circulation on or off; the inch flow and return continuing to the conservatory, which is about 30 feet from the grapery. Both graperies and conservatory can be heated together, or each separate. This is done by simply having a fifty-gallon pan, with four flow and four return pipes, and four stopcocks, which are necessary to shut the water in the boiler, when wanted, to be used for steaming. The boiler is fitted with water-gauge and safety-valve complete, so that no accident can happen; and as soon as the steaming is done the circulation is turned into the pipes; which, I understand, is very rapid, and very economical in point of fuel. The houses were erected last May twelvemonth.

There is a Vine-border inside and outside, with a hollow, or pigeon-hole, wall between, to carry the plate, and the Vines are planted inside the pipes in the border; consequently, when the air is admitted by the ventilators, it strikes against the hot pipes, and becomes rarefied before coming in contact with the Vines, which, I understood, were planted when the houses were erected: they are *Black Hamburgs* and *Muscats*, and two houses of more healthy and robust young Vines will rarely be seen. I measured one of the rods, and it was just two inches in circumference, the foliage being in proportion. There were several bunches of Grapes in the house which were looking well. From the wall being hollow, the roots can run outside as well as in. The steam-pipes go through a laundry

and a wall into the steam cask, which is out of doors, and is an ingenious contrivance; indeed, the whole together is, I think, the best constructed and most economical plan I have yet seen, both as regards the erection and amount of fuel consumed.—AN OLD GARDENER, *Doncaster*.

HARDY CONIFERS AT HAZELWOOD CASTLE, NEAR TADCASTER.

SOME four or five years ago, I visited this fine old place, the seat of the Vavasour family, and found forming a large Pinetum. This season it fell in my way to call there again, and I was anxious to see what species of these ornamental trees were living and thriving. The soil is a dry, gravelly limestone, rather shallow, and the situation is rather sheltered by some tall deciduous trees at a distance. In front of these trees they have planted a belt of Scotch Firs and Austrian Pines, which thrive well, and will eventually shelter the Conifers effectually. The kinds that have stood the frosts in this northern part for five years are:—

Pinus Benthamiana, growing freely.

P. excelsa, growing freely.

P. macrocarpa, very healthy and strong.

P. Hartwegii, growing freely and uninjured.

P. Sabiniana, not so healthy.

P. occidentalis, doing well.

P. insignis, growing rapidly, and very healthy.

Picea Webbiana, one tree healthy, another much deformed.

P. nobilis, growing remarkably well.

P. Nordmanniana, not in the least injured.

P. Cephalonica, healthy, and uninjured.

P. Pinsapo, very healthy.

Abies Douglasii. Planted in a deep soil it thrives well, where the soil is thin it turns yellow.

A. Menziesii, healthy and thriving.

A. Smithiana, fine; specimens very healthy.

A. orientalis, thriving well.

Cryptomeria Japonica. Near the wood this fine tree was remarkably healthy. In more exposed situations its leaves turn brown in winter.

Cupressus Lambertiana. A close-growing, tall, healthy specimen.

C. macrocarpa, generally considered synonymous with the preceding; but here the difference is distinct enough. It has a more spreading character, is equally hardy, and thriving well.

Fitzroya Patagonica, not healthy, but evidently recovering.

Taxodium sempervirens, healthy, and growing fast.

Taxus adpressa, strong and healthy.

Cedrus Deodara, growing fast, and very healthy.

Cedrus Deodara Atlantica, also growing freely.

Araucaria imbricata. In sheltered places doing well, more exposed it loses the ends of the old branches occasionally.

The rest of the rarer Conifer tribe were mostly thriving, only very few were quite dead. The above, however, may be safely planted in a northern climate.

The gardens here are extensive, and the Vines were bearing some fine fruit. In a long house, the Camellia is planted out, and is very healthy, bearing flowers profusely every year. The gardener, Mr. Conety, is an intelligent, good man, and would keep the place in first-rate order; but owing to a domestic calamity, his means are now very limited; still he does his best, and succeeds to a considerable extent.—T. APPLEBY.

ANECDOTE OF THE ROBIN.

MANY have been the interesting accounts related of the robin redbreast, from the time of the nursery tale of the "Children in the Wood" until the present day, and the following short account will be numbered among the anecdotes of that favourite little bird. In the garden of the Laurels, at Clewer, near Windsor, a robin comes every day when called to be fed. He will perch himself on the hand of the lady of the house, and take his meal without displaying the slightest symptom of fear. Frequently he has flown quite across the garden, and has taken bread out of her mouth. When satisfied, he perches himself either upon the bench near his

mistress or upon the nearest bough, and sings his song. In no instance has he refused to be fed, or neglected the usual call for him.

We have heard a good deal about the robin redbreast, but cannot remember anything more interesting than the fact here recorded. It ought, perhaps, to be stated that the little fellow has never been caught or confined, but is in his natural state.

AN ALLOTMENT GARDENER'S ESTIMATE OF THE ALLOTMENT SYSTEM.

WILL you let me have space in your valuable periodical to jot down a few thoughts on allotment gardens? They appear to me to be a thorough English mode of affording recreation and health, and inducing habits of industry in the working classes and others.

My attention has been called to this fact by the success attending the adoption of this plan by Lord Calthorpe, who has turned a meadow in the neighbourhood of the botanic garden of this town to that purpose. This field contains about twenty acres, which is apportioned into 150 gardens, divided by quickset hedges. They have now been in cultivation about two seasons, and, from what I hear, give great satisfaction. The rent is 24s. each per annum, payable half-yearly. As I have one myself, I can speak of the pleasure and profit derived from it; and I have witnessed the same in others. Especially on evenings during this past glorious season, it has been delightful to see these self-formed labourers returning with their spoil, after having subdued the stubborn soil. I know of as many as eight or nine workmen, from one of our large manufactories alone, who have gardens in this plot of ground. I humbly submit that this mode of furnishing recreation to the working classes is far preferable to that of parks, &c., though patronised by royalty itself; and if our rulers and public men would only take the trouble to look into this matter they would be of the same opinion. Besides, gardening has not this alloy, namely, that of tending to habits of expense in dress; for who would think of attending a park except in his holiday clothes. I need not detail other expenses, such as refreshment, &c. Gardening, on the other hand, entails no such extra expenses,—the same dress, the same food as on ordinary days, is quite sufficient. I may be said to view this in a one-sided manner, but I appeal to the good sense of masters,—whether they would not rather have the workman who was fond of these rural pursuits, than the frequenter of parks, gymnasiums, or debating societies, not mentioning the attractions of the theatre or tavern? Again I say, would that our rulers would take this to heart!

May I append a query? I wish to know why a Melon plant which has been very healthy, planted under a two-light brick frame, with a Cucumber, and kept rather drier than the Cucumber, should have all the young Melons fall off and fail? This is the second year that the same has happened to me. Some one said that it was because I had not inoculated them; but I tried that plan, and did not find any difference. J. L. PHELPS, *Edgbaston, Birmingham.*

[Want of sufficient moisture at the root, for Melons require a drier air, but not a drier soil than Cucumbers; want of sufficient heat; want of sufficient light and air; and many other wants may have been the cause of the young Melons falling. Which want was the cause no one can tell, without knowing more about your treatment of the plants.]

"TWO MEN SHALL BE IN THE FIELD."

(By the Authoress of "My Flowers.")

THERE is scarcely one of my readers, I dare affirm, that has not an interest in our Eastern empire, at this particular time. Every feeling of our hearts has been touched and lacerated,—and many hearts are bleeding still. High and low suffer together, and we love to dwell even on little incidents that belong to this afflicting period of our history,—a period that seems as if it could never end,—as if all the armies of this world could not, without utter extermination, quench the smouldering fire. What wonderful and supernatural escapes we have read of, and trembled over! and how

solemn and silencing have some of the calamities been! David himself was tempted to wonder and murmur at the mysterious dealings of the Lord, and, until he "went into the sanctuary of God," he could not understand. Who can sound the depths of Almighty wisdom? Who can look into His high decrees? The stretching forth of His hand, and the pouring out of His spirit, alone control the destinies of nations and the lives of men. Unless we read history, behold events, and view all things around us, by the light of Scripture, we *must* be led to murmur, or doubt, or disbelieve! Without an open Bible, and a beam from Heaven upon its pages, how *can* we perceive "the one shall be taken, and the other left?"

Two young civil engineers were thrown into each other's way in the course of their professional career, and formed a warm and sincere friendship. The elder of the two, R. G., was a man of some standing in his profession, also of talent and energy. He was employed in carrying on a large and important dock-work, and had been for a very long time located in a neighbourhood where no other gentleman was to be found, and where his only recreations were reading and the cultivation of a musical talent, which, under *strict control*, is often a sweet solace in retirement, and a benefit to those possessing it. The arrival of a young man to assist him in his labours was a pleasing event to Mr. G. They were both gentlemen in birth and education, and the younger, C. B., soon made himself a valuable accession of comfort to his superior. He was quick, steady to his work, full of life and spirit, and sufficiently advanced to be a companion in tastes and opinions. They also had both widowed mothers and were seeking to maintain themselves. This was a strong bond of union, and they would sit at leisure hours and discuss their anxieties, their hopes and their fears, and speculate upon what might be their professional importance in days to come. Mr. G. was a man of very decided opinions and high principles; this was of extreme advantage to an inexperienced youth, so likely to receive lasting impressions from those among whom he dwelt. It was a halcyon time to both, but it quickly passed away.

In less than two years from the arrival of young C. B., the works were completed, and the social intercourse of the friends ceased. Affection remained firm between them, however, and a correspondence was kept up. Mr. G., anxious for employment and emolument, went to the Crimea, in the Army Works Corps, passing through many scenes of peril, but returning in safety, with honour and advantage, at the conclusion of the war.

Young B. in the meantime, anxious for employment in India,—then the wide and fertile field for British talent and enterprise,—offered himself to the Railway Company in that country, and obtained an appointment on the Calcutta and Delhi line. Just before he left England, his friend, Mr. G., spent two days with him. It was a farewell visit, and the friends believed they were about to part for years. The one was entering on a five years engagement in the East; and the other seeking a high situation in our own happy land. It is an affecting sight, when men in their days of youth and energy set forth on their different missions in life, plunging into a dim, misty, and unknown futurity, oftentimes so different from their expectations, and blinded to the trials, perils, and disappointments, which, like bulls of Bashan, "close them in on every side." Youth is not wont to provide itself with the "five smooth stones from the brook;" it is, unhappily, but too ready to put on an armour which it has not proved, or to go forth in that joyousness of spirit, and fulness of confidence, specially belonging to the spring time of life, but which does not shield its head in the day of battle. The loving hand of a pitying and tender Father guides and defends them when they know it not; and who can estimate the power and prevailing efficacy of a mother's prayers, when their sons are battling with the weary world? In the solemn privacy of the mother's closet, what mighty things are done!

In a very few weeks from the departure of C. B., his friend received an offer from the same Railway Company, to proceed to India, to survey a projected line in Oude. It would be a short trip, but a lucrative one, and, as he was unemployed, he consented. It would fill up waiting time, and he would probably gain in every way by the undertaking. When Mr. G. gave in his acceptance of that offer, how little

he could suppose what the close of it would be! How it behoves us to do nothing; no, not even accept a professional engagement, without seeking counsel, not of men, but of God!

The survey was successfully made, and, at its conclusion, a longed-for, and delightful meeting took place between the attached friends. They had parted but a few short months in dear old England, and now met, as by magic, under the burning sun of India. Already "the changes and chances of this troublesome world" had come upon them. They had begun, but how were they to end? C. B. wrote to his mother, in raptures, of their joyful meeting, and a fortnight's happiness together. His letter was written in Lucknow, (alas! that awful name!) whither he had accompanied his friend on his way to Calcutta—HOME. He said they had travelled exquisitely, surveying the country, discussing scientific and professional matters, sitting in the door of their tent at evening-time, and talking of things past, present, and to come. *To come!* What simple, yet what solemn words! Oh, dear reader, have you or I ever overtaken the things we hoped would *come*? or, if we did, have we not too surely sat down and sighed over them? Whether we are old or young, let us reverently obey the precept, "For that ye ought to say, If the Lord will, we shall live, and do this or that."

R. G. was to visit his friend's mother on his return, to tell her of his health, and looks, and doings; and in June, in fact soon after that very letter reached her hands, she was to expect to see him. But to this joyous letter was added a hurried and terrible postscript.

Mutiny had broken out, no one knew exactly where, or how, but the country was in arms, and all was dismay. The friends parted at Lucknow, in confusion of body and mind, the one towards Calcutta, the other to his post in the heart of the country, as best they could. The beauties, the luxuries, the pleasures of India, "departed as a scroll, when it is rolled together;" terror, sufferings, and death overspread the land, and all was broken up and changed.

Still, amid the surgings of that tempest of blood, unparalleled in England's history, not one bullet flew, not one sword struck, not one heart ceased to beat, no, "not a sparrow fell, without our Father."

The rapid flight of C. B., to his post of duty displayed the mercy and power of Him who alone can still the tumult of the people. Alone, in a strange land, among a furious and barbarous multitude, he fled unobserved, and in safety. For months, exposed to dangers, privations, and horrors, "the good hand" of his God was with him; and, although "a thousand fell beside him, in battle, sickness, and violence, no arrow came nigh him!"

R. G. has been heard of no more. One notice only reached his friends in England, he had "joined Sir Henry Wheeler's gallant band at Cawnpore." Since then, a deep and solemn silence has settled upon his brief history. His mother has "looked forth from her lattice" in vain. "Why tarry the wheels of his chariot?" In the inscrutable councils of Almighty God, the one widow's son was taken, and the other left!

Deep are the wonderful decrees of Almighty wisdom! They are past finding out. How shall we fathom them? No deep-sea lead can sound them, for they are hidden from everlasting. If the bleeding heart should cry, "Why is my son smitten?—why am I marked out for grief?" the Divine answer whispers, "What I do, thou knowest not now; but thou shalt know hereafter."

Chance! luck! fortune! These are the atheist's words. Dear reader, let them not slide into your heart. How prone we are to speak them! But they are full of deadly poison! "I form the light, and create darkness: I make peace and create evil: I, the Lord, do all these things!"

PROLONGED BEARING CUCUMBERS.

I BEG to forward to you, for your inspection, a brace of *Carter's Champion* Cucumber, cut from plants which produced fruit on the 21st of December, 1857, and have continued bearing up to this time (September 14). — JOHN RODGERS, *Gardener to W. C. Moore, Esq., Bamford, Sheffield.*

[The brace of Cucumbers received with this note were

handsome, serviceable fruit, about twelve inches long, very tender fleshed, and well-flavoured. *Carter's Champion* is a white-spined variety. The propagation of the Cucumber plant by cuttings, and thus prolonging its existence, has long been known and practised; but this bearing of a succession of fruit on the same plant is new to us.]

VINE CULTURE.

IN various places the Vine is cultivated, in some very successfully, and in others not so well. An inquiring mind will naturally be led to seek the cause of this varied success. I have generally found, that when the Vine has been planted in houses in low, level situations, on deep borders, the crops of fruit have either totally failed, or have suffered from mildew, and shanking. This is beginning to be thoroughly understood, and in such places the Vines are lifted, the border well drained, made shallower, and of less rich materials. This has been done successfully at several places within the last ten years, and is still being carried out. Yet the radical mistake of placing the vinery in a low situation is rarely corrected by removing it to a higher position. In future, it is to be hoped this evil will be avoided.

I saw, a few days ago, a fine example of the benefit of placing the vineries on a sloping bank. It was in the gardens of Mr. John Meredith, at Garston, near Liverpool. The place ought to be named Garston Vineyard, for in no place is the Vine so largely cultivated, or so successfully, or brought to a bearing state in so short a time.

Some idea may be formed of the extent of this vineyard, from the following facts:—There are two lean-to houses against the dwelling-house, each fifty-five feet long by eighteen feet wide. Also, two span-roofed houses, sixty-five feet long by twenty feet wide. One is planted with the *Black Hamburgh* variety, and the other with *Muscat of Alexandria*. Wherever practicable, this arrangement should be adopted, the latter Vine requiring a higher, drier temperature to bring it to perfection.

Then there are, besides, four houses fifty-three feet long by thirteen feet wide. These are for producing the earliest crops. All the houses are heated with hot water on a new and effective plan, invented by Mr. Meredith himself. Also, a house 116 feet long, span-roofed, and narrower, and one forty-three feet long by eighteen feet wide. These are to grow young Vines in, to fruit in pots, or to turn out in the borders of the earliest vineries. The borders of all the houses are inside,—but the Vines can send forth roots, under arches, to an unlimited extent,—and not more than two feet and a half deep, formed of the best turfy loam, mixed with a small portion of well-decomposed dung. Mr. Meredith depends a good deal upon the application of liquid manure.

The success achieved here may be understood by the fact, that it is only two years since Mr. Meredith began to put up these extensive works, or, if you will, manufactories of Grapes. The Vines were planted in June, 1857, from eyes of that year, and have now furnished the rafters, fifteen feet long, with well-ripened wood up to the very top; many of them had a large bunch or two of well-ripened and well-coloured fruit. The four forcing houses had borne a crop of fruit from strong Vines raised in pots for the purpose.

This place is worthy of a long journey, to see how the Vine should be grown. There is a railway from Manchester to Garston, and the vineyard is only a mile from the station.—T. APPLEBY.

FURTHER NOTES ON SEA FLOWERS.

(Continued from page 381.)

THE preceding paper touched a few points that may be profitably pursued by those aquarists who stubbornly adhere to the nomenclature of Johnston; and, to such beginners as have not yet given their attention to the scientific classification of their zoophytic pets, a few additional notes may be useful. For purposes of reference hereafter, let us here tabulate the several leading divisions, in accordance with the principles of distinction already set forth, so that the student may, here-

after, know to what class to refer any subject by its generic name:—

ADHERENT ACTINIA.—1. Non-retractile tentacles.
2. Retractable tentacles.

Non-retractile.—A. With circular base, body forming a column,
—*Anthea*.

B. Annular base, lobed—*Adamsia*.

Retractable.—A. Tentacles terminating in knobs—*Corynactis*.

B. Tentacles truncated—*Capnea*.

C. Tentacles conical. a. Emitting filaments—*Sagartia*. b. Not emitting filaments—Warted *Bunodes*, smooth *Actinia*.

NON-ADHERENT.—1. Tentacles simple, retractile—*Ilmanthus*.

2. Tentacles non-retractile—*Arachnitis*.

3. Body worm-shaped, and enclosed in a protective sheath—*Edwardsia*.

4. Body pear-shaped, with posterior orifice—*Peactica*.*

By reference to the above, it will be found an easy matter to refer any unknown Actinia to its class, and hence the naming of it will be considerably simplified. A few descriptive notes of species may here prove useful to those who take an interest in this subject, and it will be best, perhaps, to arrange them in accordance with the foregoing formula.

ANTHEA CEREUS.—This is the only species of the genus formed to receive it. Its very distinctive character renders it a fine ornament to an artificial rockery in an aquarium. It adheres like other Actiniae, but loosely, and is easily detached. The tentacles are not numerous, seldom amounting to more than 150. In structure, the tentacles are worm-like, long, taper, and flexible; and when the creature is in health they are very regularly expanded, and fall over on all sides very gracefully, and are perpetually in motion. The specimens vary in colour, from a pale dove-colour to white and brown, but deep slate appears to me to be most common. When the sunlight glances through the tank, the slate-coloured specimens acquire a bluer tone, and the mind at once likens them to those mats of dyed wool which are commonly used in bedrooms. Indeed, our domestic name for them is "marine doormats." *Anthea cereus* is by no means a hardy creature in confinement, and it would be unwise to keep more than two in the same vessel. It dislikes warmth, must not be handled, or in any way disturbed, and is most safe to keep from October to April. The aquarian must not think himself particularly unfortunate at the loss of his specimens, for the most experienced find it difficult to keep them for any length of time. To preserve it for any long period, it should be fed once a week, and will then take a piece of prawn or oyster with unmistakeable relish. The clinging power of the tentacles renders it inadvisable to keep in the same vessel with it any lively creatures, for they may in an instant be seized by one of the long snake-like arms, and so drawn to destruction. The figure of this Actinia, appended to the last paper, was sketched from a very fine white specimen in Mr. Hall's stock. Mr. Sowerby's figure of one which allowed a thread of conferva to hold one of its tentacles in suspension is most happy, and that gentleman's description of it is graphic and entertaining.

ADAMSIA PALLIATA.—Mr. Gosse was the first to do justice to this very curious creature. It is the only species of its genus at present known, and it stands alone and unique in its beauty and curious construction. Instead of a sucking base and a cylindrical column, the body is, apparently, annular, so as to embrace, like a ring of flesh, the whole of the inner mouth of a whelk shell. The *Adamsia* is usually found in company with the hermit crab; the two being joint tenants of the shell, and the crab scrambling in and out as he likes, over the seemingly tender body of the beautiful creature. When taken in hand for the first time, the aquarian is sorely puzzled to understand the theory of the structure of the *Adamsia*; for it has the appearance of having, at some previous time, filled up the mouth of the shell, and then been bored through, and the wounds healed over, and the mouth and tentacles newly formed, to suit the case. And there it is, encircling the mouth of the shell, its body covered with spots and wrinkles, the ground usually white, dotted with rosy-purple and pink, with a warm flush of reddish-brown and

fawn on the upper part; the long, oval disc has a large mouth and puckered lips, well furnished with short tentacles of the purest ivory whiteness. The latter set close together like a double row of teeth, and never assuming that full expansion common in *Sagartia* and *Bunodes*. That the annular form is apparent only is explained by Mr. Gosse, as follows:—"The *Adamsia* is evidently an Actinia of a long, oval form, capable of development, in its long diameter, into two lengthened wings. Its instinct invariably leads it to select, as its support, the inner lip of some univalve shell, having adhered to which, the lateral expansions creep along the shell, following its surface until they have surrounded the aperture, and meet each other on the outer lip. Here the meeting edges unite by mutual adhesion, and seem to grow together; yet the suture is always distinctly visible, both by a slight depression, and by a pale line, which assumes a zigzag form, owing to the terminations of the body-striae fitting into the interspaces of the opposite ones." *Adamsia* is well furnished with the barbed threads, of which mention has been made, and the creature has the power of entangling and piercing an offending animal almost instantaneously. A single filament, under a high microscopic power, shows millions of capsules, so that the creature is in itself a storehouse of ammunition for assault and defence, independent of the power of its tentacles. This is a rare species, and one very difficult to keep. A vessel should be appropriated to it alone, with a bottom of clean shingle, and a few healthy tufts of *Algæ*. So scarce is it, that in the course of a whole year not so many as a dozen find their way to London, and, as it is hazardous to keep, the dealers are reluctant to supply it. I purposed to engrave it for THE COTTAGE GARDENER, but was unable to obtain a specimen for the purpose.

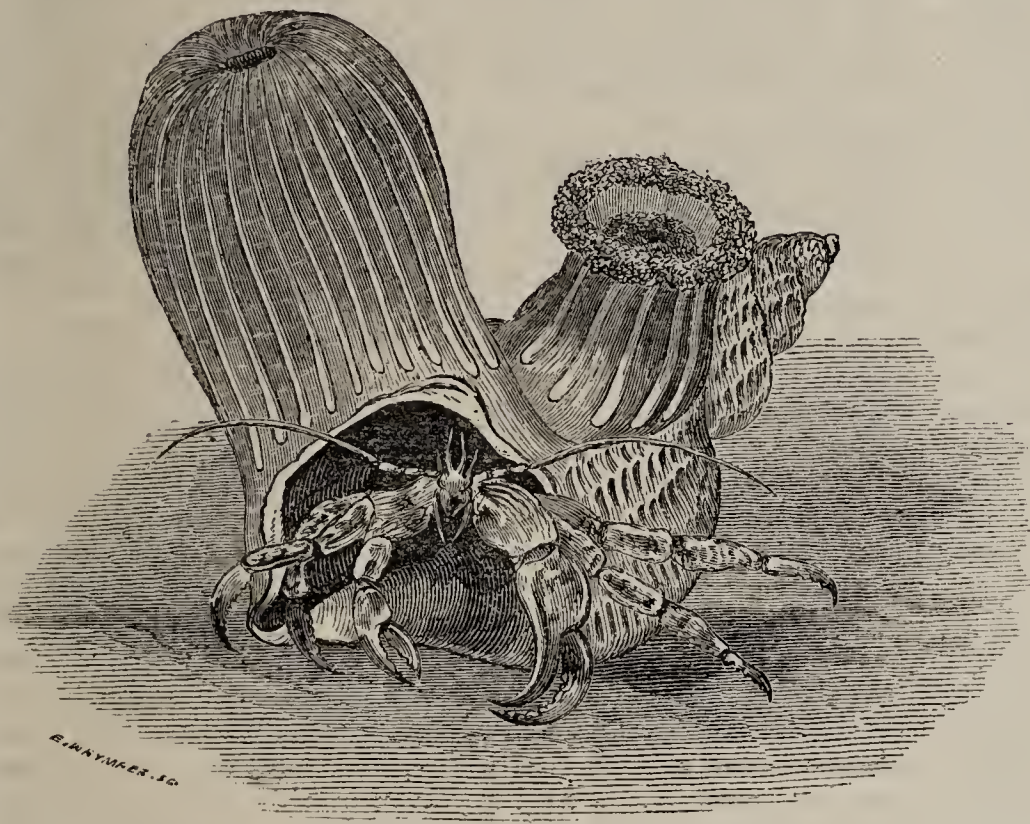
CORYNACTIS ALMANII.—This is one of the miniature Actiniae, not so small but that its delicate lines and graceful form are clearly perceptible to the eye, but best viewed by the aid of a lens. It is here figured from a group on a block of hard sandstone in one of my own vessels, where the pretty creatures have flourished since last autumn, when I had a great variety of stock up from Poole and Weymouth, and, among other things, the beautiful bottle which was figured in No. 500 of THE COTTAGE GARDENER. Those who are familiar with the trumpet-shaped animaleules, will recognise in *Corynactis* a very near relative, for it is little else than tentacles and stomach. The column is formed of very thin and pellucid membranes, and is capable of contracting to the smallness of a grain of mustard seed. When extended and expanded, the edge of the disc is the part most brightly coloured, sometimes bright scarlet, the remainder of the creature being pale pink, and the tentacles white. Some specimens are green, and others take various shades of crimson and rose; but, whatever the colour, *Corynactis* is a perfect gem, fairy-like in its transparent delicacy. The tentacles are in two rows near the edge, and spreading outwards over the rim, and in two more rows towards the centre, numbering altogether about a hundred. I counted 120 on the largest of mine not long since, with the help of a powerful lens. They are very short and cylindrical, and terminate in knobs, that have the appearance of semi-transparent beads. This species feeds well, and bears confinement most patiently. In feeding, it reminds one of the passage of a monad into the stomach of a vorticella, for the Actinia expands its mouth, and often shows the whole of the stomach; and when the prey is taken, the mouth closes again, and the morsel is perceptible through the pellucid walls of the stomach. If the water is the least foul, *Corynactis* not only dies, but disappears in a day or two; but if kept bright by the dipping process I have already described, and the standard of density carefully maintained, I know no reason why these lovely and minute creatures should not be preserved for years, and increase all the while.

CAPULA SANGUINEA is a creature possessing but little interest, except to the genuine naturalist. Its colour is a vivid carmine or vermilion, but as it is scarce, and does not live long in confinement, it is seldom seen in tanks. Its distinctive peculiarity is seen in the form of its tentacles, which are truncated, very short, and in a single row; and when expanded they are so regular and square in outline, as to look like embattlements surmounting a tower; and the frill-like reflection of the lobed skin with which it is covered, may, by a

* "Sowerby's History of the Aquarium," page 94.

stretch of fancy, be likened to a *chevaux de frise*. It is usually of a cylindrical form, but is eccentric in its habits, and undergoes many and curious changes.

SAGARTIA PARASITICA.—This popular Anemone is very distinct in character, and has fine outlines, colours, and proportions. It is rarely met with, except on shells tenanted within by the hermit crab; and it is borne hither and thither by the restless *Pagurus*; and submits patiently, and without hurt, to all the hard knocks against the glass, and the smart grindings against the rough stones which happen to lie in the way of the hermit's march. In a shallow tank, fitted expressly for crabs, the specimen here figured led a merry life,



Hermit Crab in shell of Buccinum, with Sagartia parasitica.

in company with a lively lot of hermits, soldiers, and spiders, that were fighting all day and all night, and yet never to the injury of the pretty pair of *Parasitica* our favourite Diogenes carried about on his tub. I had it sketched, because there chanced to be two full-grown specimens on the same shell,—we rarely meet with more than one,—and I have since regretted that the sketch should have been reduced, because this was the finest hermit I ever possessed, and he ought to have had full space to show his sprawling legs and formidable foot jaws.

S. Parasitica is a large species, frequently attaining to a height of four inches, with a diameter of nearly three inches. The column is regular and symmetrical, slightly spreading at the base, where it takes a firm grip of the shell to which it is attached. The ground colour of the column is generally drab, very regularly marked, with longitudinal lines of dark brown, or purplish brown; and those towards the base break into yellow, sometimes very rich and warm, at others pale, and mixed with subdivisions of white lines. Just before it fairly expands, the upper rim is seen to be thickened, but this disappears when the tentacles are spread out. The tentacles are most elegantly marked, and, though possessing no striking colours, arrest attention by their number and regularity. They are very pellucid, and variously tinged with yellow, cream, or purple, but always reticulated with precise markings; and, in some specimens, there are regular alternations of colour all round, a patch of white, then a patch of purple on the marginal fringe; six groups of each usually in the circle. Our woodcut cannot do justice to the specimens from which the sketch was made. The prevailing tint was dark brown, with snowy lateral lines, blotched round the base with upright streaks of orange and white. In one specimen, the innermost rows of tentacles were of a similar tone of brown, broken by a precise arrangement of white lines; and these were surrounded with a ring of the purest ivory white, and beyond it was another fringe, coloured to match the centre. In the other and larger specimen the same tones of white and brown were varied in arrangement, so as to form a broad brown cross on a snow-white ground; there being four divisions of brown and four of white, meeting across the lips;

and the disc partaking of the same arrangement when fully expanded,—as it almost always is, in spite of being frequently jolted hard against the rockwork,—the fringes overlap the column, and form a most perfect star with half a thousand rays. There are seven rows of tentacles, each larger than the last, from the centre to the circumference, and these are all set firm, and have little motion.

That the Parasite Anemone should bear the ill-treatment to which the hermit subjects it, as he travels about the tank, like a wandering showman, is easily understood, when we come to dissect it; for its outer coat is almost as hard as horn, and the mouth and tentacles are leathery and tough, despite their pellucid appearance, and the readiness with which they are distended with water. This species throws out an immense number of the filamentous threads when annoyed; and, though it has the power to withdraw them again into the body, if frequently irritated, so as to provoke their discharge, it leaves its foothold, and perishes in a few days.

When carefully kept, however, the *Parasitica* is as hardy as it is noble. In water frequently agitated, and kept to the standard of density, it holds tight to the shell; and is carried about into every corner of the tank, and is sometimes lifted out of water, when *Pagurus* chooses to mount a stone that is only slightly submerged; and this seems in no way injurious to it. It is a voracious feeder, and will take a shred of mutton or oyster every other day, if it is offered when the tentacles are fully expanded, and the creature in vigorous health. But if the water gets foul or too dense, or if fresh water is added too suddenly, or if oxygen begins to fail, *Parasitica* will be the first to drop off her perch, and, though things may be quickly restored to *statu quo*, *Pagurus* will not long survive her. What has a showman to live for, if the exhibition Amazon is numbered with the dead?—SHIRLEY HIBBERD.

QUERIES AND ANSWERS.

PRICES OF TRITOMA UVARIA AND TRITONIA AUREA.

"In your number for September 7th, Mr. D. Beaton tells us cottagers to 'make a memorandum for a beautiful autumn bed,—six *Tritoma uvarias* encircled by eighteen *Tritonia aureas*,—which ornament to our gardens we are to acquire for 10s. Now, if after making such a memorandum, I send it as an order to my nurseryman, he will return me plants in good time, plus his memorandum, to wit—

"A. GREENHAND, Esq.

"To Prunem & Graft.

6 <i>Tritoma uvarias</i> , @ 2s. 6d. each	£0 15 0
18 <i>Tritonia aureas</i> , @ 1s. each	0 18 0
	1 13 0

I speak experimentally, having bought both plants, after inquiry as to their prices at various nurseries. Will you kindly ask our good friend to tell us how to do as he says, at the cost he lays down; otherwise some member of my family (the Greenhands of Soft Hall) may ask his nurseryman to alter the form of memorandum, and to book '10s. to me, and the rest to Mr. D. Beaton.'—A GREENHAND.

[My credit is mortgaged for the next three years against that of the Judges of florists' flowers at the Crystal Palace, and "A GREENHAND" must wait his turn. I did not mean, however, to impute roguery to them, or to any one, as might be inferred from the first part of my report. But I have heard of roguery at our own Show, at Kingston, for the last two years,—great roguery,—and in two years that roguery broke up the Society. Therefore, it is quite true, that roguery, in any department of a Show, will soon put it to the wall. But "A GREENHAND" owes me five guineas, minus the difference in his bill against me. I live by experimental philosophy, and my terms have been long before the world;

five guineas is the lowest sum I charge for an experiment. After hammering for years to introduce the two plants in question into general cultivation, without success, I tried that experiment on purpose to try the pulse. "GREENHAND'S" pulse was up the first to the proper buying point, and, being so, he is my debtor in the sum aforesaid. There is no reason why *Tritoma* should not be sold at 1s. the plant, and *Tritonia* at 4s. the dozen, but the want of demand. Both of them were introduced more than 100 years since. When I was hunting out the *Peacock* Iris, three or four years back, I found *Tritonia* was figured, 100 years back, as an *Ixia*, in Vienna; and it was then at Kew and most of the bulb collections round London. It could be sold as cheap as the commonest *Ixia*, if there was a good demand for it. It increases faster than any *Ixia*, and comes from self-sown seeds in the border. The day I was at Kew, I put *Tritoma* down at 30s. the dozen, and *Tritonia* at 12s. ditto, and I agreed to exchange thirty-six *Tritonia* for twelve *Tritoma*, with Mr. Smith, the Curator, so I must have known the price.—D. BEATON.]

PRUNING A YELLOW BANKSIAN ROSE.

"I have a yellow *Banksian* Rose, growing, as I fear, too luxuriantly, it having produced so little bloom during the two seasons I have occupied the garden. It has a southern aspect, and is trained against a wall, but is getting out of bounds. Some of the shoots of this are from ten to twelve feet long, and very strong. At what season should it be pruned? and to what extent? What course would be the best to produce its flowers?"—Z. A.

[You must not touch a shoot of this yellow *Banksian* Rose till the end of April. Have it well tied or nailed in to the wall, and look over it at the end of April, and cut, first, any shoots which may have suffered from frost to below the injured parts, if any; and secondly, cut from six to ten inches only from the points of the very strongest shoots, letting the rest remain at full length. Next November,—say, six or seven weeks hence,—you are to bare the roots of this Rose, just as if you were going to remove it. Then you will see very strong roots, middle-sized roots, and small roots. Cut just one-half of the very strongest not very far from the bottom of the plant; indeed, you might, with a nice sharp chisel, cut them right off from where they come from, and let all the rest remain. At the end of next May, after the plant has bloomed, or failed to bloom, have it well pruned, by thinning out those long shoots you speak of, and by cutting others back to a few eyes. Let the very small wood remain one more season. If the Rose does not flower next May, the remaining half of the very strong roots must be cut like the rest in the following November. But if it does flower, let them alone for another season, or till the first season after a failing of bloom. It is the too great strength of the roots which causes such a length and luxuriance of wood, our summers not being long enough to ripen it, which causes those Roses to fail in blooming; and pruning the shoots only aggravates the evil, which is at the roots.]

BEE-KEEPING IN DEVONSHIRE.—No. II.

THE JOURNEY TO THE HEATH—UPS AND DOWNS—ARRIVAL—AN ANCIENT BRITISH CAMP—RELEASE OF PRISONERS—INCREASE IN WEIGHT—DISTANCE TRAVERSED BY BEES—7-BAR BOXES *versus* SHALLOW 8-BAR BOXES.

SHORTLY after five o'clock on the morning of the 11th August, a large van,—usually appropriated to the conveyance of pleasure parties, and capable of accommodating upwards of a dozen persons,—might have been perceived slowly traversing one of our Devonshire lanes. A casual glance would have sufficed to show that the ordinary load of pleasure-seekers was entirely wanting, their places being scantily supplied by the writer of this article, and a friend, who, with a single attendant besides the driver, were the only visible occupants of the lumbering machine. A closer inspection would have revealed the interior crowded with square boxes, surmounted by miniature roofs, which, taken in conjunction with certain straw edifices of a cylindrical form, might have led an observer to conjecture that the majority of the passengers belonged to the genus *apis*; a conjecture which would have developed

itself into certainty, could he at the same time have distinguished above the clatter of hoofs and wheels the continuous roar which, in accents "not loud but deep," told the consternation and astonishment of the winged excursionists at finding themselves prisoners, and their habitations thus rudely shaken.

The first seven miles of our journey were easy enough, the road good, and the hills only such as to give a pleasing diversity to the scene. The last two miles constituted the main difficulty. Nearly all up-hill, and the road covered with loose stones. In vain did the horses' panting sides and reeking coat appeal to our humanity to alight and ease the load. It was as much as we could do to keep things straight within, and if one of us ventured for a moment to quit his post it was only to be recalled the next instant. Right glad were we when, with a parting lurch, roll, pitch, toss, and jerk, which threatened to bring down every comb in the hives, the machine drew up beneath a clump of Fir trees, and we found ourselves at our journey's end, at the top of one of the highest hills in the neighbourhood, and in the middle of an expanse of heath which, stretching away for miles on either hand, promised almost unlimited pasturage for our winged foragers.

Buried in this clump of trees, and scarcely perceptible from the cross-road which passes close beside it, is a cottage, and in the cottage garden we have permission to place our bees. Truly we could wish the trees were not so high, or that some avenue existed whereby our little favourites could obtain more ready access to the open country; but it is not so, and we can only console ourselves with the reflection, that here the wind never blows, and that at any rate, in this intrenched camp, the hives will be well sheltered.

Let us look around,—bathed in the rich sunlight of a summer's day, one of fair Devon's fairest scenes lies spread before us. Wood and water, hill and vale, land and sea, combine to form a panorama which, for extent and beauty, may well bear comparison with any even in this favoured county. Nor is the spot on which we stand devoid of some historic interest. Well did the old Roman, or the more ancient Briton, choose his ground; and when this double ditch was clear, and these decaying earthworks perfect, it must have been a daring and a resolute foe who would venture to assail them. Here, also, the stern Roundhead quailed and fled before the swift charge of the fiery Cavalier; and here, in later times, a camp was formed in anticipation of the threatened Gallic invasion.

But to return to our bees, which have by this time been unpacked and placed upon their temporary pedestals. Put on your bee-dress, open the entrance, and stand by for a rush!

No. 1, open—all quiet—a few rush out, and seem puzzled at the change of scene. No. 2. Stand clear! out they come, tumbling one over the other till the front of the box is covered, and a cluster hangs beneath the alighting board. No. 3, all quiet.

My friend now opens the entrances of his four hives with varying results. Some quiet, some excited, and some spiteful. In a short time the air becomes filled with bees shooting hither and thither, and circling higher and higher, till, over-topping the tall trees, they dart off and disappear. A few seem to mistake their hives, and a little fighting and confusion is the consequence.

It is not long, however, ere our little foragers turn their attention to the rich harvest which awaits them. The first load of pollen is observed in about thirty-five minutes; and a pleasing hum arises, as all seemed to find, in honey-gathering, an unexpected solace for the untold woes of their morning's imprisonment. Like more celebrated characters—

"They found, so runs the story,
In full belief
They'd come to grief,
They'd really come to glory,"

Or to profit, which many appear to consider the same thing.

The following are the weights of the three hives up to the 31st August, repeating that of the 10th, the day before the removal:—

Date.	No. 1.		No. 2.		No. 3.	
	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.
August 10	11	4	11	8	15	6
" 15	14	8	15	8	17	8
" 26	20	0	20	8	22	8
" 31	20	8	21	4	22	4

This must, I think, be deemed satisfactory. Even No. 3,

with its supposed old queen and scanty population, has gained about seven pounds in the three weeks, whilst the other two have probably doubled their store; allowance being made for the diminution which takes place at this season in the numbers of the bees themselves. All this, too, has been done at a time when those remaining at home have continued rapidly to lose weight.

In visiting the hives on the days above indicated, I was much struck with the ardour with which all worked, appearing as active as in May; and, considering how the populations had been thinned by the autumnal deaths, it was surprising to see such crowds of honey-gatherers. As bearing upon the question of the distance traversed by bees in search of pasturage, I may remark, that, at the very time my bees were most active, some strong stocks which I inspected not more than a mile distant were doing nothing, and probably breaking in upon their winter's store.

Of the three hives, the seven-bar one (No. 2) is undoubtedly the strongest, being well-filled with bees. Next comes No. 1, and last, No. 3, which has comparatively few inhabitants, and presents a melancholy contrast to its prosperous appearance during June and July.

Little can be concluded from one experiment, and No. 2 may have had an unusually prolific queen; but my impression is, that heat appears more concentrated in the seven-bar box, which, on that account, would seem better adapted for breeding than broad and shallow boxes.—A DEVONSHIRE BEE-KEEPER.

P.S.—Most of the queries of your esteemed correspondent, "AN OLD APIARIAN," are, I think, answered in the foregoing article.

"HANDY HELPS TO USEFUL KNOWLEDGE."

UNDER this title is publishing a series of penny treatises on whatever may be the topics of the day. They are marvellously cheap, and necessarily on very varied themes—from "Eclipses" to "Mormons," from "Sir Colin Campbell" to "The Leviathan." They are good epitomes of information, relative to subjects of which everyone is talking. The number now before us (price fourpence) is "The Indoor-Naturalist," and gives hints and directions for constructing and stocking Wardian Cases, Aquaria, &c. It concludes with the following extracts from a century-old pamphlet on "The Water Garden:"—

"It is entitled, 'A Flower Garden for Gentlemen and Ladies; or, the Art of Raising Flowers without Trouble to Blow in full Perfection in the Depth of Winter in a Bed-chamber, Closet, or Dining-room.' From this strange old book we will take the liberty of making such extracts as are likely to interest the in-door naturalist, to whom we must leave the task of verifying the statements which they contain.

"'I flatter myself,' says our quaint author, 'that the following improvement in the delightful art of gardening, as it has hitherto escaped the thought of the curious, will meet with no unwelcome reception, it being a contrivance to divert the ingenious, in a place and at a time they cannot be otherwise furnished with those pleasing objects of delight; that is, to raise many sorts of flowers in a chamber, in the greatest smoke of London, and in the midst of winter, and to have them blow in full perfection within the twelve days of Christmas, as I had myself in the last Christmas past.'"

"'I shall run into no extravagances, and only give the reader what I performed with very little trouble, leaving the improvement thereof to better understandings.'

"After having described his early experiments, in which he succeeded in raising Tulips, Snowdrops, Crocuses, and other plants in large basins filled with good garden mould, he arrives at the conclusion that earth can be entirely dispensed with, and that the plants may be made to flourish in water alone.

"'I resolved to trust to the effects of water only,' he continues, 'that is, without earth, which would be a much neater and cleaner way, and might be more acceptable to the curious of the fair sex, who must be highly pleased to see a garden growing, and exposing all the beauties of its spring flowers, with the most delicious perfumes thereof, in their chambers or parlours—a diversion worthy the entertainment of the most ingenious; but yet farther, to bring

this to a more profitable use by raising young salads in the same place, and all with very little trouble or charge.

"'I bought some dozens of flint glasses of the Germans, who cut them prettily and sell them cheap. I bought them from whole pints to halves and quarters. These glasses are wide at the top, and are made tapering to the bottom, which renders them very convenient for this use. I likewise bought some glass basins as large as I could get, and took care to choose them also tapering from top to bottom; then I fitted pieces of cork, about half an inch thick, to the inside of the tops of the glasses, which could not sink far in, by reason of the glasses being less all the way from the top to the bottom, as aforesaid. In these corks I cut holes proportional to the roots which I designed to place upon them. Some glasses would hold two roots, some but one, and some three or four. The corks on the basins had many less holes cut in them, in order to place on them a number of smaller roots, which might blow together with the more splendour. Being thus prepared, which was all my charge and trouble that way, my next business was to get the flower-roots. A little before Michaelmas, I accordingly made a small collection of Polyanthus and Narcissus roots, several sorts of Hyacinths, Tulips, Crocuses, Daffs, Jonquils, &c., all large-blowing roots, or the labour of rearing them would have been lost. These I placed upon the corks in glasses proper to their size, the Crocuses on the corks in the basins, that they might, being of various colours, blow together to make the more pleasing object. Before I placed these dry roots on the corks, I filled the glasses and basins only just to the bottom of the corks, so that the bottoms of the bulbs would but just touch the water, of which I take the Thames water to be the best, as being strongly impregnated with prolific matter, like rich earth well manured for corn or garden use.' (In the present day the richness of the Thames water would probably prove fatal to the success of these experiments.) 'My dry roots being thus placed in my windows, some of them even with the panes, others with their tops only even with the bottom of the sash, which, by the way, I kept always shut, because my glasses hindered the opening of the casement; but, doubtless, a little air in very fine weather, when the wind was only in the south or west, and when there was no frost, would have been very advantageous to the plants—I took particular care that no water should be filled up to wet any more than just the bottoms of the bulbous roots, for that would certainly have rotted them, and have destroyed all my hopes.

"In a few days after I had placed my spring flower-roots on the corks over the water they threw out their white fibrous roots strongly into the water, which was a most diverting pleasure to behold. The whole process of that germination (if I may so call it) was visible through the glass. When the glasses were pretty well filled with these fibrous roots, that is, when there were enough to draw sufficient strength for the nourishment of the leaves, stalks, and flowers, the green buds first appeared, which soon shot into leaves, and the stalks with the flower-buds soon followed, all as strong, or, I may say, rather stronger than the garden does afford. They grew so fast, and yet with a full strength, that I had Polyanthuses and Narcissuses blowing out in perfection before Christmas-day, with all their perfection of colour and perfume. Several Hyacinths followed them in the same manner. The Crocuses would have been equally early, but I could not get any roots to my mind till some time after Michaelmas, which occasioned their being later than the rest of their companions. I at last met with the large roots of the great blue Crocus, which blows late, and very often not at all. The yellow Crocus and the white-striped, or very pale blue, are the forwardest, and the best to be chosen for our use.

"'At a time when the gardens are divested of all their beauty, this early production will supply the curious ladies with most agreeable perfumes for their chambers and parlours, and with nosegays to adorn their bosoms at Christmas, when they dress their houses with evergreens. It must be remembered that the rooms in which this gardening is carried on must have fires in them every day, as I had in my chamber, which was kept with reasonable warmth all the day and evening, but not in the night. These exceedingly forward rarities are certainly most grateful to the exterior senses; but this leads me to a more useful fact, namely, that by the same means you can produce, as early as you

please, something that may be acceptable to the taste and nourishing to the microcosm, or little world—the body; that is to say, that you can raise fine young salads in the coldest part of winter, in any warm room, as aforesaid, and very near after the same manner.”

TO CORRESPONDENTS.

PANCRATIUM (F. G.).—The flowers of your bulb died on the passage, but it appears to be the *Paneratium Carolinianum*, of which a bad figure is given in the “Botanical Register,” 927. Its flowers are sessile, like those of *maritimum*, and they are the only two hardy *Paneratiums* which have the flowers that way. The true *maritimum* is not now in cultivation, as far as we know, and, of course, not on sale. How, as you say, an evergreen bulb-like *maritimum*, with pedunculated flowers, should be mistaken for a deciduous bulb with sessile flowers like *Illyricum*, proves how little is known about bulbs at the present day. Yours, and *Illyricum* and *maritimum*, are the only three hardy ones.

TAKING THE END COMBS—FIXING GUIDE COMB (A Beginner).—Most of the bee books give instructions for separating the combs from the sides or ends of the box. In Nutt's, Payne's, and Taylor's works, illustrations are supplied of the kind of knife required. The “Bee-Keeper's Manual” exhibits a simple and cheap tool, which any workman in iron can make (page 123, 5th Edition). Most of the dealers keep them on sale, or something that answers the purpose. The same work, and Mr. R. Golding's little book, contains ample directions as to the mode of attaching the guide combs to the bars of the hive. With a flat-iron the bar can be slightly warmed, and a little melted wax put upon it. Warm a bit of clean worker-comb on the iron, and place it in the centre of the bar, to which it will adhere, if done quickly and expertly. The natural pitch or inclination of the comb must be observed.

DOUBLE PETUNIAS.—It never rains but it pours. No sooner were “the royal family” of Petunias registered, than in came another box with another set of twelve double kinds of Petunias, from “H. T.,” who lives out near Mr. Fish. These are quite different from the royal family, and they are said to do well in beds. They are certainly very pretty flowers. When double Petunias are proved to be such good pot plants, there will be such a call for them as will induce breeders to follow them up till they are of a size and variety to represent Camellias in doors all the summer months.—D. BEATON.

GARDEN LABELS.—Seeing an inquiry in your issue of the 7th inst., for a garden or tree label, I beg to state, for the information of “CANTUM” and other readers, that I manufacture a label which seems to be what he requires. It is of cast iron, with a rebate in the front for a glass. The name is written on a card, and the glass fixed over it with putty, the same as a square of window-glass. I make them in three sizes, either to drive in the ground, or to hang, and I will warrant them to last, in the most exposed situations, for many years. Price 4s., 5s., and 6s. per dozen. They are described in my catalogue, which I shall be happy to forward to any one who may request it.—WM. T. GIDNEY, Manufacturer, East Dereham.

PETUNIA SEEDLING (J. W.—, St. Paul's Parsonage).—A very nice border flower, lilac, profusely pencilled with purple. See what Mr. Beaton says to-day about Petunias. They are being improved rapidly.

BLACKBERRY WINE (Experimenter).—We cannot answer the question for certain; but it seems that it will be ready in October of the same year. Try.

ANTHOLYZA ELLIPTICA (N. O.).—The plants you name will live out somewhere, but as you did not say where you wrote from, we cannot say if they would live out with you. The *Antholyza elliptica* will live out near London, with a slight protection in hard frost. *Solanum capsicastrum* we never heard of before. The flowering of the *Canna Indica* depends on your locality, of which we have no information. No book can teach you how to get a living by raising poultry and vending their produce.

VARIOUS (A Subscriber).—1. All the Ayrshire Roses will live under trees, and we believe they are the only ones. We had *Ruga* carpeting a large space under Beech trees. 2. Peaches and Neectarines will be best for your west wall in the south of Ireland. 3. The earliest kinds of Strawberry, such as *Black Prince* and *Keens' Seedling*, will be best under your south wall. 4. We will publish a general index, if we find that our subscribers will save us from loss by paying for it.

RINGING THE VINE (A Lover of Fruit).—We can testify as to its success in promoting the size and early maturity of Grapes. Years ago we also practised it successfully upon some branches of a Pear tree. It would, probably, also promote fruitfulness in the Apple; but ringing could not be practised on any stone fruit, owing to the gumming it would occasion.

GARDEN PLAN (A Lady).—If we could be sure of doing either you or ourselves justice, we would point out a plan as you request; but this is out of the question, when we know nothing about the situation or any particulars. In a word, we never have, and never can, give an opinion relative to a place we have not inspected.

CULTURE OF GOLDEN CHAIN GERANIUM (Flax).—The *Golden Chain* grows wonderfully slowly in the best compost. In about ten years, if it is in very good health, it will be about the size of a *Tom Thumb* ten months old from a small cutting. The best compost to keep it in during the winter is three parts rough turfy peat and sand, and one part half-rotten leaf mould, and a good drainage; to be up close to the glass all the winter, and freely ventilated. It will winter equally well over Heaths, or above Pine-apples, and in a cool house. Very little watering suits it best. In the summer it is always, and under all circumstances, best out of pots in the free soil, and any good garden mould will do for it. All amateurs ought to strike it from cuttings in February and March, and plant them out after Midsummer, if only to nurse them,

DESTROYING BLACK BEETLES (An Old Subscriber).—Try “Chase's Beetle Poison,” we know it to be very effective. Black beetles come to enjoy the crumbs and dainty scraps unavoidably to be found in the kitchen.

HYDRANGEA WITH BLUE AND PINK FLOWERS (An Old Subscriber).—This is very common. We saw one not long since in a cottage garden near the Royal Palace in the Isle of Wight. Mr. Beaton some years since published directions for causing the flowers to become blue.

INSECT ON AZALEAS (G. P.).—They are infested with Scale (*Coccus*). If you refer to our indexes, you will find repeated directions for destroying it.

GREENHOUSE PLANTS FOR EXHIBITING IN AUGUST (A Free Lover of Exhibitions).—The 10th of August is not a good season for exhibiting greenhouse plants. Many of the best kinds are then out of bloom. The following are the best you can procure, to show at that season:—Two plants of each kind should be cultivated, in order to ensure success. *Acacia oleifolia elegans*, golden yellow; *Cassia corymbosa*, yellow; *Diplacus grandiflorus*, buff; *Erythrina crista-galli*, crimson; *Indigofera decora*, rose; *Kalosanthus coccinea superba*, scarlet; *Nerium splendens*, rose; *Pleroma elegans*, dark purple—the best of all for that season; *Relbania squarrosa*, yellow; *Statice Holfordii*, purple and white; *Tremandra (Tetratheca) verticillata*—no flower must be allowed on this plant till the middle of July; *Lapageria rosea*, requires a large pot and rich soil. If Cape Heaths are allowed in the collection, there are several that flower in August,—namely, *Erica Irbyana*, *E. Arheriana*, *E. oblata*, *E. Princeps carnea*, *E. retorta major*, and *E. verticillata nova*.

CRYSTAL PALACE SHOW LILIUMS (W. W.).—We sent your note to our reporter, and this is his reply:—“All those who grow only one bulb of the Japan Lilies in a pot have no chance of a prize, as the fashion is to grow them in the lump. Hundreds of plants, at all Shows, are never mentioned in reports, and we very seldom notice cut flowers, except Roses, Dahlias, and Asters. Every one who failed in getting a prize for Lilies at the Crystal Palace deserved to have the names and plants mentioned favourably, as there was not a bad Lily there. The same with Ferns, and all kinds of plants. But in a work like ours the thing is out of the question, for want of room, and from not being generally useful, or interesting. What is wanted, in fact, is this—that all Societies who give prizes for plants, should publish a list of every one who contributed to their Shows, making honourable mention of all who deserved it. We do more than all the rest, in giving publicity to the Shows of the London Horticultural Society, and to that at the Crystal Palace.”

SEEDLING FUCHSIAS (J. D.).—*Eclipse*, very bold, and almost the stoutest flower we know; sepals dark crimson, very reflexed; corolla purple; stamens and pistils crimson, and very prominent. It is a striking flower. *Princess Beatrice* smaller; sepals light crimson; corolla creamy white, but too much stained with pink. We do not know the habit of the plants.

NAME OF FERN (T. Pitter).—Your specimen is unfertile, but we believe it to be a small specimen of *Polypodium dryopteris*.

NAME OF CATERPILLAR (Wells).—What you call a “worm,” is the caterpillar of the Privet Hawk Moth. It will do no damage to your flowers, feeding upon the leaves of the Privet, Poplar, &c. It is very common.

NAMES OF PLANTS (H. A. D.).—Your “small Apple” is the Siberian Crab (*Pyrus prunifolia*). It varies much in size and colour, according to soil and situation. Your plant is the Great Flea-Bane, *Conyza squarrosa*. (T. W. F.).—Yours is the broad-leaved American Birthwort, *Aristolochia siphon*. (Margaret).—The varieties of Geraniums were all fallen to pieces. It is almost impossible to identify these, unless we see the whole plant. The *Calecolaria* is *C. pinnata*. Your long-leaved Begonia is *B. incarnata*, and the smaller-leaved, *B. parvifolia*. The botanical name of the Pansy is *Viola tricolor*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

SEPTEMBER 21st and 22nd. BRIDGNORTH. Sec., Mr. Richard Taylor, Bridgnorth. Entries close the 15th of September.
SEPTEMBER 21st and 22nd. LICHFIELD.
SEPTEMBER 26th. PAISLEY. Entries close Sept. 18. Sec., Mr. Wm. Houston, 14, Barr Street.
OCTOBER 7th and 8th. WORCESTERSHIRE. Sec., Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.
OCTOBER 13th and 14th. CREWE. Sec., D. Margetts, Crewe. Entries close 30th September.
NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. Sec., Mr. J. Morgan. Entries close November 1st.
DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. Sec., Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.
JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). Sec., W. Houghton.
JANUARY 20th and 21st, 1859. LIVERPOOL.
FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. Secs. R. Teebay, and H. Oakley.
FEBRUARY 9th and 10th, 1859. ULVERSTONE. Sec., Thos. Robinson.
N.B.—Secretaries will oblige us by sending early copies of their lists.

PARTRIDGE SHOOTING.

(Continued from page 386.)

THE next thing was to catch him. I was a stranger to him, and I knew no Rarey secret of taming a wild dog. It

was, however, impossible to put up with this howling, and I went down to take advantage of any happy thought or fortunate circumstance. When I reached the yard, he was delivering himself of a longer and louder note than common. I had my whip in my hand; I measured the exact length of his chain with my eye, and gave him the sharpest cut I could. He did not expect it; he gave one yell of pain, and then rushed at me. The chain held on well, but he drew the kennel several inches. He was then quiet, and watched me. I was pleased with my performance, and, with the magnanimity of the victorious, I offered friendship. I approached as nearly as I could with safety; I held out my hand, called him by name; but all in vain. Instead of a wagging tail, he showed a row of teeth that might be envied by every one; but my wife, finding he was quiet, called to me to come in. "Well, you see," said I, "I have mastered him." My triumph was short-lived: before I had reached the door of my room the howl had begun again. Another note came from my neighbour, begging me, for the sake of his sick child, to prevent the noise; and from my disagreeable one, to say he was surprised it continued. Well, I sent my wife to bed; and, finding he was quiet while I was in front of him, I put on a great-coat, and, taking some cigars, determined to wear him out,—I did it only for the sake of the sick child. Seated in a large kitchen chair, wrapped in a great-coat, with a cigar in my mouth, I kept my dog in awe!

This was my first experience of having a dog of my own, and the next morning saw the first little cloud I had ever seen on my good wife's face. She wished I had never seen the dog. She soon came round, and, as usual, offered the best suggestion,—that I should send for the man of whom I bought him, tie a direction on his collar, and send him to her father's. Her brother, she said, understood dogs. I suppose she meant thereby I did not. Accordingly, a messenger was sent. He returned with the intelligence the man was not to be found. No one knew anything of him, and he had only asked permission of a friend to allow him to keep the dog there two days. What could I do? I must be in the City by ten. My wife declared she would not be left with the dog; and Mrs. Martin said she would rather lose us as lodgers than set the whole neighbourhood against her by keeping it. "My good woman," said I, "I am as anxious to send him away as you are; but I have no one to send him with. Find me some one." She went away, and soon returned with an odd man, who was sometimes helping in stables and sometimes amateur waterman on the cab-stand. I told him what I wanted, and thought it but fair to inform him it was a savage dog. "Never mind, Sir," said he; "he won't hurt me, depend upon it." Of course, I was curious to see his process. He went straight to the kennel, looking hard at the dog, and speaking to him all the time. He then unfastened the chain, and, whistling to him and calling him by name, led him away. With what joy I gave the direction to tie on his collar! and so my dog went into the country.

The time between this and the 1st of September presents nothing of interest. There were the usual consultations about costume, and the numerous purchases of indispensable articles that were useless. The gun was constantly put together, and then put away. The dog had become an old joke, at which we both laughed; and my wife, who had seen the 1st of September come and go many years without any great excitement, was more than amused at my enthusiasm.

Anxious to get as many shooting days as I could, I did not go down till the last day of August. I need not say we had a hearty reception. There is a heartiness in a farmhouse you cannot meet with in towns. Men's habits are different, and agriculturalists are not accustomed to have their time so absolutely bespoken, and so tyrannically allotted out, as men in business: hence, much of the difference. How busy I was unpacking the gun, going over the list of all my different articles, and taxing my memory to be sure I had omitted nothing.

"Lots of birds," said my brother-in-law. "And my dog?" asked I. "Oh, he is in capital condition. I am afraid he is a little wild; but he is at the upper yard. He howls so at night, we can't bear him near the house." I saw a smile on every one's face, and my wife laughed outright. I could bear it, for I was very happy.

I went to bed early, that I might be up by times in the

morning. I never had such a bad night. I woke up continually. I thought the daylight would never come; but at last there was a little break in the east, just a feeble dawn. I got out of bed, gazed at it, chided its tardiness, got into bed, and went soundly off to sleep.

About six o'clock I woke up, jumped from my bed, and found it raining hard. I was disappointed, but I nevertheless dressed, I thought, noiselessly, but not so much so, that I did not have numerous remonstrances about "fussing about,"—"tearing up in the middle of the night,"—"shooting upsets everything,"—"what can you do in a pouring rain like this?" I got up. I confess, when I got down stairs, the prospect was gloomy; it did rain, as it only rains sometimes after a severe drought, and when, it would seem, the pent-up moisture comes down like an avalanche: it does not drop, it falls in a body. I stood at the door, booted and gaitered. I had had a hint not to put on my nailed shoes, as they were not fit for running up and down stairs. Still, the idea of coming into the country on purpose to shoot, having everything necessary, and not putting it on, seemed a sort of wickedness.—[In middle-class houses, where the proper people are not kept to provide and attend to all things necessary for the pursuit, amateur sportsmen should give as little trouble as possible. They are apt to imagine their hobby is as important to every one else as it is to themselves, and that the fact justifies upsetting all the arrangements of a house; but it is not so. They should endeavour to interfere as little as possible with others.]—Now, although it was, for a time, impossible I could get out, yet I put on my heavy-nailed shoes, and waited impatiently at the door, looking for a change of weather. Every now and then I walked into the house, and it was not till I had a gentle hint, about "stabbling" in and out, that I perceived the mess I was making. I then went to see my dog; he was in excellent condition, and I could not help laughing heartily when I thought of my first adventure with him. Still the rain fell in torrents, and, spite of my anxiety to make a start, my brother-in-law declared it madness.

Thus, my first day's sport was confined to getting all my things in order, to dressing before daylight, and to waiting all day for a change of weather.

(To be continued.)

TAMWORTH EXHIBITION OF POULTRY.

THIS Exhibition, held annually in connection with the Sparkenhoe Farmers' Club, has for a series of years been notorious for the very spirited manner in which it has been conducted; and certainly this year an equal amount of energy and long practice has been called into requisition to procure success, and most happy are we to say that the result has been pre-eminently satisfactory. Every arrangement was complete. The attendance embraced almost every family of distinction for many miles around Tamworth, whilst the engagement of an excellent band of music, with the additional interest ever attendant on a floricultural meeting, which was held conjointly with the Poultry Exhibition, drew together a number of the fair sex almost without precedent.

The poultry, as a whole, were naturally somewhat out of condition (particularly the old birds), from the season for moulting being just in the midst. Consequently, some few pens originally entered for competition were not actually sent; and many were the expressions of extreme regret that met our ears from amateurs, who, thus acting upon the supposition that it would be useless to exhibit them, found to their mortification that the successful birds were in precisely the same predicament. The chickens exhibited, on the contrary, were mostly in first-rate feather. For the "Silver Cup, awarded to the three best pens of poultry of any variety, exhibited by one person, to be entered separately for this particular prize," there was a goodly muster. One of the exhibitors in this class made a most extreme mistake, in sending a cock completely rumpy, the eye being swollen to excess, and, as the only sequence, endangering the health of all surrounding poultry. The Committee very properly had the bird at once removed. It is well to mention, that, by common consent, it is everywhere recognised at agricultural meetings, as also at poultry exhibitions, that any specimen betraying positive

symptoms of *infectious* disease is at once removed, in common justice to other competitors; and, to prevent the careless repetition of such entries, perchance it would be well to add a fine upon their owner, where such reckless indifference to the interests of others is evinced. Had these birds been differently exhibited, there is but little doubt in our minds that they might have been successful. But "the wind that blows ill-luck to all is indeed a bad one," so says the old axiom, and such was the case here; consequently, the cup was eventually won by three most meritorious pens,—one of Black-breasted Red Game, such as are rarely to be seen; one of excellent Golden-pencilled *Hamburgs*, and a very creditable pen of Grey *Dorkings*. Among the pens shown in this class were some wonderfully well-grown *Empden Geese*.

We believe that the Meetings of past years rather excelled, in both *Spanish* and also Grey *Dorkings*, those now competing. There were some excellent White *Dorkings* however.

The *Game* classes were very superior; the *Hamburgs* and *Polands* not being so good.

The White Aylesbury class was first-rate, and in the class for "any other variety of *Ducks*" was exhibited, by C. R. Colville, Esq., M.P., a pen of the almost extinct variety of the so-called "Poland Ducks;" they were entirely white ones, and, although some thirty years since comparatively common, they are now very rarely to be met with. Some of the Buenos Ayres Ducks in this class were perfection, and were claimed almost immediately the Show opened.

We cannot possibly speak too highly of the *Geese*, they were worthy of the locality, proverbially renowned as it is for the superiority of these useful birds. Any among them would have been worthy of prize-taking at most Shows.

The *Turkeys* exhibited by the Countess of Chesterfield were very good.

The *Bantams* were not equal to the classes exhibited at former Meetings of this Society.

The show of *Pigeons* was decidedly a very superior one, and embraced not only excellent specimens in the general classes, but also many rare varieties.

In *Rabbits* there were some very heavy ones, others equally praiseworthy for length of ears; and likewise a good specimen of the white Angola Rabbit.

Mr. Edward Hewitt, of Spark Brook, Birmingham, again officiated as on many previous occasions, and his awards, as heretofore, were satisfactory. The day was a suitable one, for although at sunrise some little apprehension prevailed that rain would ensue, nothing save the slightest sprinkling for a minute or two prevailed; there was nothing, therefore, to mar the happiness of any one, and we again express our most unfeigned satisfaction that such meritorious efforts to promote success met with so complete a reward. The birds were exceedingly well attended, nor, on inquiry, did we hear of accident of any kind happening to a single specimen. The general welfare of our poultry shows would be greatly advanced, were Committees, as a rule, to adopt the principles scrupulously carried out by the Sparkenhoe Farmers' Club.

The prizes we append.

A SILVER CUP for the Three Best Pens of Poultry, of any variety, exhibited by one person. Each Pen to consist of a Male and two Females.—The Cup, H. Lowe, Comberford (Dorking, Golden-pencilled *Hamburg*, and Black-breasted *Game*). Highly Commended, J. M. Baker, Dordon Hall. Commended, R. Choyce, Bramecote Hall. Disqualified, J. Choyce, Harris Bridge.

SPANISH.—First, E. Morley, Sapcote. (No second prize awarded, there being no competition.)

DORKINGS (Coloured).—First, Miss E. S. Perkins, Sutton Coldfield. Second, J. Faulkner, Bretby Farm.

DORKINGS (White).—First and Second, R. Farmer, Whateley.

COCHIN-CHINA (Coloured).—First, Miss E. S. Perkins. (No second prize awarded, there being no competition.)

GAME (White, Piles, and Light Colours).—First and Second, J. Hand, jun., Amington. Commended, R. Choyce, Bramecote Hall; J. Taverner, Hartshill.

GAME (Red and other Dark Colours).—First, T. Huskins. Second, J. Princep, Appleby. Highly Commended, T. Huskins, Wilnecote; W. Dester, Seckington; R. Walker, Kingsbury. Commended, J. Choyce; C. Hopkins. (A very good class.)

MALAY.—Second, R. Choyce, Bramecote Hall. (First withheld.)

HAMBURGH (Gold-spangled and Pencilled).—First and Second, G. Woodcock, Hinckley. Commended, Miss E. S. Perkins.

HAMBURGH (Silver-spangled and Pencilled).—First, Miss E. S. Perkins. Second, F. Cheate, Dosthill. Commended, J. Faulkner.

POLAND.—First, J. Choyce, Harris Bridge. (No competition for the second prize.)

BARN DOORS.—First, J. Faulkner. Second, J. Choyce.

FOR ANY OTHER DISTINCT BREED.—Second, W. Hunter, Ashby-de-la-Zouch (Friesland). (First prize withheld.)

DUCKS (White Aylesbury).—First, J. Choyce. Second, F. Cheate, Dosthill. Commended, J. M. Baker, Dordon Hall. (A commendable class.)

DUCKS (any other variety).—First, C. R. Colville, Esq., M.P. (Top-knotted Aylesbury). Second, Miss E. S. Perkins (East Indian). Commended, the Countess of Chesterfield (Rouen).

GESE.—First, the Countess of Chesterfield. Second, J. M. Baker, Dordon Hall. Highly Commended, W. Winterton, Woolvey Villa; C. R. Colville, Esq., M.P. Commended, S. C. Pilgrim, Burbage. (A most excellent class.)

TURKEYS.—First, the Countess of Chesterfield. (No competition for the second prize.)

GUINEA FOWLS.—First, F. Cheate. (No competition for the second prize.)

BANTAMS.—First, Miss E. S. Perkins (Black). Second, J. Choyce, Harris Bridge. Highly Commended, Miss E. S. Perkins (Game); J. Choyce; R. Cowles (White).

PIGEONS.—*Pouters or Croppers*.—Prize, J. Choyce. *Carriers*.—Prize, J. Choyce. *Tumblers*.—Prize, W. Choyce, jun., Sibson. Highly Commended, J. Choyce; C. Clarson, Tamworth. (The whole class very good.) *Fantails*.—Prize, J. Choyce. *Any other distinct Variety*.—Prize, W. Choyce, jun. (Nuns and Archangels); J. Choyce (Blue Owls). Highly Commended, J. Choyce (Silver Turbit). (A most superior class.)

RABBITS.—*For the heaviest Weight*.—Prize, W. Choyce. *For the greatest length of Ear*.—Prize, C. Clarson, Tamworth. *For the best of any other kind*.—Prize, W. Choyce, jun. (Angola)

CAUTION TO POULTRY-KEEPERS.

IF I mistake not, there appeared in the pages of THE POULTRY CHRONICLE, a short time since, an exposure of some attempts at robbery, as practised upon poultry-keepers. Such exposures must do good, and I therefore send the following details of a similar attempt, in which the intended victim was myself. On the 17th of August, I received the following letter:—

"8 Mo., 16th, 1858.

"Respected Friend,—Please say, per return, if thou has any Silver-pencilled *Hamburgs* to dispose of, and thy lowest price for them.

"Thine truly,

"JOHN THOMPSON.

"Cross Street, Swan Street, Manchester."

Now, upon the receipt of this letter, which, by-the-bye, had the words "*Wholesale toy-belt, &c., manufacturer, Manchester,*" printed on the top of the first page (I suppose to make it look a little more genuine). I immediately said this is a sell. However, I answered the letter, stating that I had some *Hamburgs* to part with, and that the price was £1 each. On the 20th of August I received the following, with the same printed heading on the paper as before:—

"8 Mo., 19th, 1858.

"Respected Friend,—Thine of the 17th, with price of Silver-pencilled *Hamburgs*, is duly to hand. In reply, thou may forward me two pens of them, at price quoted, namely, £1 each. An arrival of same shall meet my prompt attention, by a remittance for amount of invoice.

"Thine truly,

"JOHN THOMPSON."

I have transcribed the words in the above letters as they were written in the originals, and the fact of such mistakes did not make a more favourable impression on my mind as to my would-be-Quaker buyer. Therefore, I wrote and told him, that, upon the receipt of a post-office order for the £6, the birds should be sent off by the Great Northern Railway.

Perhaps I need not say that I have never since heard from my "Respected Friend," though I wrote a third time, to know whether he intended to have the birds, as if not they would be disposed of elsewhere.


There the matter stands. The "*prompt attention*" has never been called upon for a "*remittance*," and my birds were not despatched to Cross Street, Swan Street, Manchester. Mr. John Thompson is, as he doubtless would have been had he received my *Hamburgs*,—*non est*.

Now it is quite possible that this same individual may have tried this game on with others besides myself; or, if he has not done so, that he, or some of his confederates, will do so at some future time. Therefore, I consider it only kind and neighbourly to ask you to insert this letter in your POULTRY CHRONICLE, in order that my brother poultry-fanciers may be put upon their guard, and learn in time to beware of parting with their fowls before they receive their money.—FRED. B. PRYER, Bennington Rectory, Stevenage, Herts.

OUR LETTER BOX.

"HELP ME, MY FRIENDS."—We have now two letters for the writer of that communication.

WEEKLY CALENDAR.

Day of Mth	Day of Week.	SEP. 28 TO OCT. 4, 1858.	WEATHER NEAR LONDON IN 1857.				Sun Rises.	Sun Sets.	Moon R.and S.	Moon's Age.	Clock after Sun	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
28	TU	Cacalia Kleinia.	29.934—29.794	70—36	S.W.	.04	57 af 5	44 af 5	56 af 7	21	9 20	271
29	W	MICHAELMAS DAY.	30.073—29.940	72—36	S.	—	59 5	42 5	58 8	22	9 40	272
30	TH	Chironia linoides.	30.028—29.957	69—43	S.E.	—	0 6	40 5	16 10		9 59	273
1	F	Adesmia viscosa.	30.063—29.999	60—41	S.W.	.01	2 6	38 5	44 11	24	10 19	274
2	S	Aretotis decumbens.	30.174—30.013	65—53	S.W.	—	4 6	35 5	morn.	25	10 37	275
3	SUN	18 SUNDAY AFTER TRINITY.	29.983—29.696	66—48	S.W.	—	5 6	33 5	12 1	26	10 56	276
4	M	Balsamina latifolia.	29.704—29.639	64—43	N.E.	.02	7 6	31 5	38 2	27	11 14	277

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-one years, the average highest and lowest temperatures of these days are 63.7° and 44.4°, respectively. The greatest heat, 79°, occurred on the 29th, in 1832; and the lowest cold, 24°, on the 28th, in 1828. During the period 97 days were fine, and on 120 rain fell.

GARDENING OPERATIONS FOR THE WEEK.

KITCHEN GARDEN.

IF any plants lately planted out are seen to droop, without any visible cause, an examination at the roots should take place; when, most probably, a grub will be found, which, if not destroyed, will extend its ravages.

BORECOLE.—Plant, to fill up vacant places.

CAULIFLOWER.—Continue to prick out the young plants under handglasses and in frames. Some potted singly in small pots, and placed in any convenient situation where they can be supplied with abundance of light and air, and protected from heavy rains and severe frosts, will make fine plants for transplanting with bulbs of roots in the spring.

CELERY.—Such as may be required for early use should be earthed-up to the full extent of the leaves; but for successional crops, freedom to the foliage should be allowed, to produce luxuriant growth.

LETTUCES.—Plant without delay, in sheltered places, or in frames, as advised last week.

POTATOES.—Continue to take up the crops as they arrive at maturity.

RADISHES.—Sow in a frame, if a succession is required; and thin out the late sowings.

SPINACH.—Thin out the winter crop, from six to nine inches apart, and keep it free from weeds.

TOMATOES.—Any unripe fruit should now be cut, and placed on the shelf of a greenhouse, or pit, fully exposed to the sun, to ripen it.

FRUIT GARDEN.

APPLE TREES.—Destroy moss on the trees by scraping, and afterwards washing them with soot and lime-water, mixed to the consistency of thick paint.

APRICOT and CHERRY TREES.—Remove the leaves by slightly whisking a broom over them, to expose the wood to the ripening influence of the sun. This brushing should be performed, if necessary, two or three times, and always very carefully, not to injure the buds.

CURRENT TREES.—All that have been matted up to be opened, the dead leaves, &c., cleared away, and the bushes allowed to dry, when the covering should be carefully replaced.

PEACHES, NECTARINES, and VINES.—Clear them of leaves, so as to expose the wood.

STRAWBERRY BEDS.—Remove runners, and slightly fork up the ground between the rows.

FLOWER GARDEN.

The weather has latterly been most auspicious for the flower garden; the masses of colours are now most brilliant, and, but for the fitful falling of the leaves, we might fancy summer is with us in all its glory. But a change may soon come over the scene, when a sharp frost will destroy the beauties of our gardens; therefore, it is advisable to have at hand

some slight coverings, to protect half-hardy plants from the first attack of frost, which is generally of short duration, and succeeded by fine weather.

AURICULAS.—Put in frames for the winter, if not already done. Shade from hot sun, and protect from heavy rains. To be watered sparingly, but they must not be allowed to flag.

CHOICE PLANTS (in beds).—If it is intended to preserve any of them through the winter, they should be taken up without further delay, potted in clean pots, and placed in a close pit until they have made fresh roots, when air should be freely admitted in favourable weather.

CHRYSANTHEMUMS.—Such as have been grown in the open ground, to be taken up in showery or dull weather, and potted, well watered, and shaded. If there is any apprehension of frost, to be removed to the greenhouse. Plants against walls to have their shoots neatly tacked in.

CROCUSES, IRISES, JONQUILS, and SNOWDROPS.—Plant without delay all such early spring-flowering bulbs.

DAHLIAS.—Go over them, to see that they are true to name, and, if without names, that the colour of each may be noted, as a guide to their arrangement next season.

PICOTEES and CARNATIONS.—Finish potting the layers. When potted, to be placed in a close frame for a few days, until they have made fresh roots.

POLYANTHUSES.—Seedlings may still be pricked out, to get established before winter.

TREE LEAVES to be collected at every favourable opportunity, and pitted in some convenient place, to decompose. Leaf mould is most useful; it is an excellent substitute for peat soil, and of great service when mixed with the mould in the flower-beds, and for the culture of plants in pots.

WILLIAM KEANE.

COMPARING NOTES.

DWARF DAHLIAS.

“IN the beginning of September, I have scarcely a bloom on the purple *Zelinda*, white *Zelinda*, and *Crystal Palace Scarlet*, and yet the plants are strong, luxuriant bushes, with leaves almost fit for parasols. My plants are anything but dwarf. I calculated on having them eighteen inches in height, and now they are double that height. Would you advise me to lay them, and how to set about it?” “I gave my plants careful management, kept them in hotbeds, and other warm places, until the middle of May; but, though having plenty of growth, I have had little bloom, and that small and smothered with foliage.” These are samples of the many inquiries and complaints that reach me, merely, I suppose, because I happened to speak strongly of these plants for flower-garden purposes. They come, also, somewhat opportunely, as I think I have gained a

little more useful information concerning them this season; and that may be chiefly summed up in the belief, that in general we are apt to defeat our intention, by giving these plants too much of our kind attention, so far as keeping them in much heat before planting-out time is concerned. But to be more particular.

With respect to the first complaint, I found that the plants were not planted with single stems, but that the old root, after it had thrown up shoots a foot or so in height, had its numerous shoots thinned out to six or seven, and was then planted in rich, well-dunged soil. These dwarf Dahlias, when intended to grow naturally, I have uniformly recommended to be planted with one stem, or shoot, to each. Even that, after it has thrown out plenty of side-shoots, and the soil is rich, will require a considerable amount of disleafing near the flower-buds, to show off the bloom to perfection, and to cause a good amount of the strength of the plant to be thrown into these flower-buds, instead of into a mass of parasol leaves. Under the treatment given, I should only have expected full flowering to take place when many of the leaves were removed, and the roots were a little stunted, as respects rich feeding. On the one-stem system, and moderate disleafing, the plants will never complain of generous treatment at the roots. Much experience enables me to say, with some degree of confidence, that Dahlias in general, and these dwarf Dahlias in particular, never bloom so well as when planted with only one stem, whether that stem has a portion of the old root attached to it, or is struck from a slip or cutting.

Secondly. With respect to such plants, and those alluded to in the second complaint, and especially if they form part of a group of uniform height, there need be no scruple about tying, or laying them down to any desired height. If such layering was my object, I should not so greatly find fault with the plants having two or three stems instead of one. I lately described how my friend, Mr. Fraser, layed the tallest Dahlias, by giving the stems a twist near their base without breaking them; that twist enabling him to turn the shoot at pleasure, whilst the mere twisting of the stem did not materially interfere with the circulation of due support from the roots. On that method I would have no hesitation in layering these beds to any desired height, by merely commencing at one end, and going regularly over them, placing stem after stem, and just leaving as much foliage as would cover the layering down process from observation. If time and labour are no great objects, some pretty beds may thus be formed,—the prettiness, however, in my estimation, greatly consisting in the whole process being so hid from the observer, that the fact that they are so layered never strikes him. In some of our public gardens,—and where complaints of want of labour-power not unfrequently are placed before one's attention,—this layering process, in flower-beds, is becoming all the rage; just as if the beauty of a flower-bed, whatever the natural habit of the plants with which it is filled, consisted in these plants being tortured into almost a uniform level with the grass, or gravel, with which they are surrounded. If this uniform low level is the great object, would it not be better to use naturally low-growing plants at once, and more especially when economy is a professed object? I have seen beds of the tall *Ageratum*s, *Salvias*, &c., such as *fulgens*, a few inches in height, and as flat as a chess-board, pointed out as perfect triumphs of artistic layering, and pegging skill. While, to my mind, the very fact that all this labour had been bestowed, just to deprive them of their natural habit of growth, took from them just so much of their interest and beauty; and, more especially, when, to my eye, such beds, in suitable circumstances, allowed to grow more naturally, with the flowers at

the sides sweeping the lawn, and rising gradually and gracefully from the sides to the centre, would, after all, be a more pleasing picture, present a more massive appearance of bloom, and be accompanied with a tithe of the trouble and labour. I have had, and seen, pretty laid-down beds of these dwarf Dahlias, and, therefore, by all means let those who like them have them; but I have never seen any so managed, so massive, and striking in outline, as when the plants were trained from a single stem, and allowed to grow upwards naturally. If on a bed, of course the strongest and tallest should go to the centre; if for a mass, the plants should not be more than from eighteen to twenty-four inches apart. For a row, the plants cannot be too equal in size and strength.

Thirdly. Extra care and kindness is not always attended with extra success, just because extra codling is as sure to spoil a plant as it is to ruin a child. Keeping this in view, it is quite as useful to record mistakes as to chronicle successes. I think that, with a part of my plants, I made a mistake this season, and it is right that every reader should have the opportunity of judging for himself, and shaping his future conduct accordingly. The facts are these, both tending to show that extra care is not attended with extra success.

Sometime ago, I looked in on my neighbour, Mr. Watson, and noticed a row of very strong plants of the dwarfish Dahlia, *Mrs. Labouchere*, and well set with flower-buds. They were grown with one stem; that stem, about nine inches high, had branched into several, and each of these was supported by a stout, short stick, concealed by the foliage. The treatment, however, was the principal thing, and I deem it worth the price of some volumes of *THE COTTAGE GARDENER*, to everyone having large aspirations and little house or glass room. A hard garden-border was selected. The Dahlia roots were placed on it, in the end of March, and were at once covered over with from eight to twelve inches of leaf mould, rotten dung, &c. This kept them safe from frost, and, as the sun gained power, the buds broke, and the shoots began to grope their way through, and the roots to ramify freely in the rotten dung and leaf mould. By the end of April, some of the shoots began to peep through, and, if frost was apprehended, a little soil was pulled over them, or a few evergreen boughs placed against them, as would be done with a row of early Potatoes. By the middle of May and onwards, the roots were taken up, cut into pieces, retaining only one shoot, and planted out at once into moderately enriched ground; the mass of fine roots that had run through the leaf mould preventing their feeling any check. If the roots had been considerably divided before placing them on the border, it might have given less trouble afterwards, but that is a matter of opinion. By this mode there would be a dense mass of bloom, six weeks before our correspondent complains that now he can get few flowers. Even for early blooming, therefore, our codling in hotbeds may defeat our object. In corroboration of this idea, take a second fact from my own practice. I started these dwarf Dahlias this season, on the floor of a forcing house. I am here confining myself to the dwarf purple *Zelinda*. When the shoots were two or three inches long, they were taken off with a piece of the old root attached, and placed about two inches apart, in narrow, portable boxes, and in sandy loam and leaf mould, and set in a house where there was just a little heat, before they began to grow and put out roots. Now, what follows, so far, is in favour of roughish treatment. When fresh roots were making from these divided plants, for want of room elsewhere, early in April the boxes were taken to a trench, formed for Celery, in the kitchen garden, from three to four

feet wide; a little rotten dung was placed in the bottom and nicely dug, and the plants were taken out of the boxes and planted out in rows, about four inches apart in the row, and the rows about one foot apart. These plants were protected chiefly with a piece of thin calico, stretched along the bed; and, at first, left on even in very bright days. In such circumstances, the plants made more rootway than headway, and, though strong and compact, and rising with good balls, few of the plants were above seven inches high, when planted out about the 20th of May. The stubby character has been maintained by them all along. The plants were a dense mass of bloom in the last days of July. They are not quite so fine now, on this the 13th of September, as they have been three times picked over, and pretty well a dozen barrow-loads of faded flowers removed; but there is a fair amount of bloom, and plenty of buds, and the plants have always maintained their stubby, sturdy habit.

I was more anxious to have a particularly good row of this *Zelinda*, than with respect to the plants I have adverted to, and gave them much more care and attention. When the first were removed to the Celery trench, these latter were taken from the boxes, and planted out in a bed, where there was a little bottom heat, giving the plants nice, rich, light soil, with a little rotten dung beneath, that the plants might lift with good balls. Frames with glass were placed over them, the plants were duly attended to with water, air, &c., and nothing could look better than they did, being seemingly double the size of those in the Celery-pit at planting time. They were nicely planted, did not seem to feel the removal a bit, grew vigorously, and were fully from eight to twelve inches above their companions; but, though showing freely enough for bloom now, they have hitherto cost far more labour in attending to them, and produced but few and meagre early flowers; in fact, taking plant for plant, have hitherto been a failure as respects masses of bloom, when compared with the plants more roughly treated. Perhaps, from blooming later, such plants may beat, in the end of September and October, those that flowered so freely and early; but that is a poor compensation for giving me more green than purple in the earlier months. I thought I could have squeezed all this into a few lines; but the length of space I have travelled over will not be harshly judged by those who have found out that the most striking results are generally the consequence of attending to, and noting, the minutiae that led to success. In future, I intend to give such plants less nursing. Our readers can choose for themselves.

R. FISH.

(To be continued.)

MEETING OF THE BRITISH POMOLOGICAL SOCIETY.

An ordinary Meeting of the Society was held at St. James's Hall, September 9th, Mr. T. RIVERS in the chair.

The following were elected ordinary members:—Miss BURDETT COUTTS, 22, Regent's Park Terrace, London, N.W.; HENRY WEBB, Esq., Redstone Manor, Red Hill, Reigate; HENRY WOODYEAR, Esq., Vassal Road, near Brixton, Surrey; GEORGE C. AINSLIE, Esq., Peaston Ford, Edinburgh; ALFRED R. BRISTOW, Esq., Greenwich; ROBERT LAING, Esq., Twickenham; Mr. CHARLWOOD, Tavistock Row, Covent Garden; Mr. CUMMING, Tavistock Row, Covent Garden; Mr. WILLIAM JAMES EPPS, Bower Nursery, Maidstone; Mr. JOHN COLE, Birchfield, Birmingham; Mr. ARCHIBALD W. GODWIN, Ashbourne, Derbyshire; Mr. JOSEPH JESSOP, Grove Park Farm, Chiswick; Mr. JAMES MELVILLE, Dalmeney

Park, near Edinburgh; Mr. HENRY RAMSAY, Exotic Nursery, King's Road, Chelsea.

The Committee,—appointed last Meeting to consider by what means the Society could most exactly ascertain the kinds of fruits which succeed best under circumstances, and in localities, as many, as varied, and as widely separated as may be practicable,—brought up their report, which was adopted, and on it were founded the resolutions that appeared in our advertising columns.

Of fruit exhibited at this Meeting, the following were the most remarkable:—

GRAPES.—This being the Meeting at which certain prizes were offered for improved varieties of Grapes, and other subjects, the only competition was for the premium of Two Pounds, offered for the best Seedling hardy Grape, of any description, not having a *Muscat* flavour. Two varieties were exhibited.

BUCKLAND SWEETWATER, by Mr. IVERY, of Dorking. This has, on two previous seasons, been laid before the Society, and on this occasion their previous good report of it was fully confirmed. One very handsome bunch was exhibited, from which it was intended a drawing should be made, and which evinced in the short, compact, well-shouldered bunch, the close relationship of this variety to the *Hamburg* section. Several other bunches were exhibited for testing purposes. They were all reported to have been produced in a common greenhouse,—Camellias and other plants being grown beneath them. The characteristics of the variety may be enumerated as follows:—Bunch medium-sized, compact, almost triangular in shape, and giving evidence of the variety being a very free setter; berries pale green, slightly amber colour when fully ripe, full size, regular, and round; skin of medium thickness, very transparent; flesh sweet, melting, partaking more of the *Sweetwater* than *Muscadine* section; seeds very few, rarely more than one in a berry. In hardiness and flavour being equal to any of the old varieties of the sections mentioned above, in cultivation, and being superior in form of bunch, as well as an excellent setter. It was considered worthy of taking a place amongst useful Grapes, and of the premium offered for this class,—which was therefore awarded.

Mr. Ivery also exhibited some bunches of *Royal Muscadine*, grown in the same house. They had, however, been subjected to much less careful cultivation in regard to thinning, and were not, therefore, allowed by the Meeting to influence them in their estimate of the value of *Buckland Sweetwater*.

In this class, also, was again exhibited by Mr. WIGHTON, of Cossey Hall, Norfolk, his Seedling *Black Grape*, which had been brought before the Meeting of August 5th. It was again regarded as a variety likely to be of high excellence, if proved to be a good keeper; but on this point more evidence, at a later period, was desired. Mr. Wighton reported that the Vine had been early forced this year, in the same house with *Muscats*, and other varieties receiving a high temperature; that the fruit of the other varieties had been all cut, or remained shrivelled on the trees, while that of the Seedling was quite plump.

Mr. MELVILLE, of Dalmeney Park Gardens, again sent specimens of his SEEDLING MUSCAT Grape, which had been considered promising at the previous Meeting. They had, however, been packed up from the 4th to the 8th, and were, consequently, very far gone. It was, however, in a state which induced the Meeting more decidedly to anticipate that it would prove a useful variety; the berries on the bunch sent being quite equal in flavour to those of *Cannon Hall*, grown on the adjoining rafter, and sent for comparison. It was said to ripen three weeks earlier than the *Cannon Hall*, in the same temperature. The Meeting considered it desirable that the Society should see the fruit again next year, by which time the plant would have attained to a higher state of development.

Mr. Melville also sent specimens of a SEEDLING *Black Grape*, raised from the *Champion*; but they had suffered so much from the length of time they were on their passage, that the Meeting preferred reserving their opinion until they should see this variety also in a more perfect state.

Mr. RIVERS brought a dish of the PROLIFIC SWEETWATER, grown in France, under the names of *Gros Coulard*, and *Froc La Boulay*. This is a long-bunched White Grape, with a thin skin and nice flavour, the berry much resembling, in size and form, that of the *Buckland Sweetwater*. It appeared to set well, and was considered a useful variety, worthy of being more generally grown. Some branches were exhibited, showing the results of some interesting experiments of ringing the bark of the wood while young: with this variety very slight difference was observable between the bunches and berries on the branches so treated and on those which had grown naturally; but Mr. Rivers described, that on branches so treated of the *Muscat of Alexandria*, growing in the same house (a cold vinery), the berries were swelling and ripening much faster than on those which were not ringed.

Mr. Rivers exhibited, from the same house, CHASSELAS VIBERT, a variety of the *Sweetwater* section,—all of which are called *Chasselas* in France,—very nearly resembling the *Prolific Sweetwater* in size, and form of bunch and berry, but attaining a warm amber colour when fully ripe, similar to that of *Muscat of Alexandria*. The skin was thin; flesh sweet and juicy; seeds few; leaves more deeply serrated than the common *Sweetwater*. It was said to be one of the earliest and hardiest of its class, and to ripen as well on the open wall as in a cool vinery. These two varieties, with the *Buckland Sweetwater*, were considered well suited to displace the old shy-setting, straggling-bunched *Sweetwater*, as more worthy of cultivation.

Mr. Rivers also brought a dish of EARLY BLACK JULY, or *Morillon Hâtif*, from a board fence, with a west aspect. This, though small, and not of first quality, is the earliest, and one of the hardiest of Grapes, suited for out-door cultivation. It is not so much known in this country as it deserves; for Vines are often planted in ornamental gardens for the sake of their foliage; and early hardy kinds, which will generally produce eatable fruit, had better be used for the purpose than any other.

MELONS.—Mr. C. W. MOUNSDON, gardener to G. HOLLAND ACKERS, Esq., of Morcton Hall, near Congleton, sent a SEEDLING from *Munro's Green-flesh*, hybridised with *Golden Perfection*, reporting it to be a strong grower, free setter, and great bearer; the fruit ranging in weight from 2½ lbs. to 5 lbs., and of a high quality in point of flavour. The fruit sent weighed 3½ lbs., was handsome in appearance, much resembling its male parent; flesh white; but the flavour was very deficient. This fruit, however, was one of the second crop, which is always least to be depended on for flavour.

PEACHES.—Of Seedlings, Mr. VEITCH, of Exeter, sent several, grown on a south wall, which all partook of the *Syrian Bitter-kernelled* character, although two of them were called English Seedlings. No. 3, called *Syrian Bitter-kernelled*, was a variety having crenated leaves, with globose glands; flowers not described; fruit melting; very deep-coloured on the sunny side; flesh very juicy, and almost white to the stone, which was small; flavour of fair average quality, but not sufficiently remarkable to become worthy of cultivation, unless it is likely to prove useful in point of season, in which respect it is stated to be "a fortnight later" than *Royal George*. It is desirable that it should be brought before the Society again next year, as the fruit was small; but this was attributed to their probably being the first the plant had produced. No. 4 was the next best; a free-stoned Peach, larger than No. 3, and more juicy, but inferior in

flavour. No. 8 was juicy and sweet, but a clingstone, and not, seemingly, late enough to make it useful, in spite of this defect.

JONATHAN CLARKE, Esq., sent a SEEDLING from a tree grown as a standard in the open garden. The fruit was not large; but, for the circumstances under which it had been grown, the flavour was very fair; flesh melting. Something must be attributed to the remarkable fineness of the past season; but it has been several times expressed, that it is desirable to encourage the production of an improved race of hardy *Peaches* and *Apricots*, which should, as standards, produce good crops in average seasons; as the fruit would be valuable for preserving purposes, if its flavour did not quite qualify it for dessert.

Mr. RIVERS brought a SEEDLING, which was a curiosity, being a free-stone, midseason variety, and having been raised from *Pavie de Pomponne*, which is a clingstone, and the latest Peach known. The flesh was remarkably juicy and sugary, and altogether a variety of good promise; tree producing large flowers, and leaves with globose glands.

Mr. KEMP, gardener to HENRY DRUMMOND, Esq., of Albury Park, near Guildford, Surrey, sent a SEEDLING, said to grow larger in the above locality than *Noblesse*, and to endure wet weather better than any other variety; the soil being described as unfavourable for *Peaches* generally. The fruit was large, handsome, and well grown, although the specimens sent were said to be the last of the crop, and less fine than those first gathered. In appearance and quality, as well as in the above particulars, it was considered closely to resemble the *Belle-garde*; but the flowers were described as small, and the leaves sent were coarsely serrated,—resembling in these respects the *Royal Charlotte*. A desire was, therefore, expressed to see it again next year, accompanied with other varieties grown under the same circumstances; as, unless it proved to be specially suited to such as were ungenial, it would not be an acquisition as a mere mid-season Peach, in that it was not superior to the usual good varieties under favourable circumstances.

Mr. VALLANCE, gardener at Farleigh Castle, near Bath, sent specimens of a SEEDLING raised by Mr. PIKE, a farmer in the neighbourhood. It was described as growing against a wall, in common soil, not having been grafted, and little attended to in regard to pruning and training, but very hardy, and bearing abundantly. The fruit was very good, and very closely coincided with the *Royal George*, in colour, flavour, season, flowers, and leaves; and, therefore, was not likely to be worthy of propagation, unless it appeared, on sufficient evidence next year, to be hardier than *Royal George* in that district, less subject to mildew, or in some other way superior. A quality not unworthy of notice, which this Peach is said to possess, is that of not ripening its fruit all at once, but so as to produce a continuation of season from the same tree. The first ripe fruit were gathered August 20th, and the last are expected to hang till the 20th of September.

Amongst other kinds, Mr. LANE exhibited PUCELLE DE MALINES, a variety which deserves to be brought more under general notice. It is usually in Peach-houses or on walls; a delicious, melting, white-fleshed Peach; those exhibited, however, were not quite in its best state, and somewhat over ripe.

A collection of *Peaches* was sent by Mr. WIGHTON, of Cossey Hall, near Norwich.

NECTARINES.—Mr. VEITCH, of Exeter, sent a SEEDLING, grown on a south-east wall. Leaves crenated, with reniform glands; flowers not described; fruit bitter-kernelled, half clingstone; small in size, round, very juicy, and in flavour rich and vinous. This was considered a promising variety, which the Council would like to see again next season.

Mr. RIVERS brought two SEEDLINGS, Nos. 4 and 6,

raised from Peach stones, and said to have been grown in an orchard house, and to have ripened a fortnight later than *Elruge*, standing near them in the same house. They were large; oval in shape; colour green, tinted with red; flesh red round the stone; flesh melting and juicy; flavour very rich. No. 6, the richer of the two. The latter was considered likely to prove a good late variety.

Mr. FERGUSON brought a kind, without name, which was ascertained to be *BALGOWAN*, a variety not much known, and the same as exhibited by Mr. Lane at last Meeting, and incorrectly spelt *Balgone* in report, as it is also in the Horticultural Society's catalogue. The flowers are small; leaves crenated, with small reniform glands; fruit was large in size, quite round, melting; and, although the flesh was white, excepting round the stone, its general appearance favours the idea that it is nearly akin to the yellow-fleshed sorts. The flavour was rich and very saccharine; but, being over-ripe, the aroma was partially gone.

PLUMS.—Some large collections were exhibited by Messrs. Rivers, Paul, Davies, Jessop, Wighton, Snow, and Selater. Amongst these, the following were the most worthy of being recorded:—

From Mr. Paul. *Pêche Heloise*, a purple oval fruit; stone separating; flavour apparently rich, vinous, and sugary; the fruit not being quite ripe. It appeared to be related to the *Impératrice*, was said to hang a long time, and bear well as a standard.

Dr. Davies again sent the local variety *JEMMY COOMBE*, which was considered to bear too close a resemblance to fine healthy fruit of *Magnum Bonum* to be distinct. The fruit measured $3\frac{1}{8}$ inches in length, and $5\frac{7}{8}$ inches in circumference.*

Mr. RIVERS brought large and very handsome specimens of *DIAMOND*. This is one of the largest purple Plums, and an excellent culinary variety.

Also, of *AUTUMN COMPOTE*, a long, oval fruit, pale-red on sunny side, resembling the *Victoria* in colour, but rather larger, and ripening from a fortnight to three weeks later; stone almost separating from the flesh. This is a Plum which has been some years before the public (being a Seedling raised from *La Délicieuse*, about twenty years since), but is not yet so generally grown as it deserves: it is a great bearer, and a first-class culinary fruit.

Also, a dish of *JEFFERSON*, remarkably fine and large, from pyramidal trees, though, of course, not yet quite ripe.

Mr. Snow, of Wrest Park, exhibited *ROYALE*, under the name of *Roche Corbon*. Fruit round, of medium size, and with a long stalk; colour pale purple, with a fine bloom; stone separating; flavour sugary, very rich, and excellent. It is, however, a shy bearer generally, and, hence, is little cultivated, notwithstanding its superior quality in other respects.

Mr. Wighton sent (with a large collection of other varieties), the true *Roche Corbon*, or *Imperial Diadem*, both which, and *Mimms*, are synonymes of *DIAPREE ROUGE*.

Mr. Jessop sent good specimens of the *REINE CLAUDE VIOLETTE*, from a standard. This is a very delicious September Plum, hardy, and a good bearer.

Mr. Selater, of Heavitree, Devon, sent *REINE CLAUDE DE BAVAY*, another excellent late hardy fruit of the *Green Gage* family. It would be well if these and similar well-proved September and October varieties were more freely introduced into gardens, in place of superfluous *Orleans*, and still more common August varieties: if this were done, autumn desserts would be much improved as regards quality and cost. Mr.

Selater also sent *PURPLE PRIMORDIAN*, an American variety, which has been for some years in this country, but is not described in the catalogues. The wood is smooth, inclined to redness, crenate, shining and woolly underneath; fruit purple, roundish oval, medium sized, handsome, with good bloom; stone separating. Appears to be a good culinary variety, and is said to keep well.

CHERRIES.—Mr. Rivers brought branches of *BELLE AGATHE*, well hung with fruit. It has small red, firm fruit, with rather large stones; flesh sweet. It is said to keep on the trees longer, and suffer from birds and wasps less, than any other kind, and, therefore, useful in contributing variety to late desserts.

FIGS.—Mr. Wighton sent good examples of the *BROWN* and *BLACK ISCHIA*; they were quite undistinguishable in colour or flavour; but the latter was rounder, and shorter in the neck; the former being more pyriform.

A large collection of Pears was exhibited, but many of them were unripe, and were ordered to be kept until next Meeting.

Francis Davies, Esq., and Mr. Wighton, exhibited some good examples of *WILLIAMS'S BON CHRETIEN*, both from standards; those from a warm soil, in the Vale of Evesham, being ten days earlier than those from the cold soil, over clay, in Norfolk.

Messrs. Rivers, Paul, and Wighton, contributed *BEURRE D'AMANLIS*, very fine and large; flesh juicy, breaking, half melting; flavour very good, approaching *Jargonelle*. Mr. Paul's were not quite so large, and less ripe; but promised to be equally good. Mr. Wighton's were the least ripe. This is one of the best early autumn Pears in most soils, very hardy, and a good bearer.

APPLES.*—A large quantity were exhibited, and amongst them many Seedlings; but the press of business before the Meeting made it necessary that the examination should be postponed of all those kinds which would keep.

Mr. Selater sent a variety called *ST. GEORGE*, raised by the late Rev. F. Doveton, of Clyst, St. George, Devon, describing the tree as of erect growth, very ornamental, and a great bearer, every branch producing a column of beautiful wax-like fruit. The fruit, in size and appearance, closely resembled the *Manks Codlin*, and, from its quiet and agreeable acid, seemed likely to be not useless as a kitchen fruit; but not superior, if equal, to many kinds of the same season. It was considered, however, that, in some cases, trees of this habit may be useful, especially in gardens of confined space, where culinary Apples are obliged to be grown amongst the vegetable crops, or not at all: in such cases, trees of fastigate habit are the most desirable; and, taking this view of the subject, it may be worth while for growers to give their attention to the originating of a race of varieties having that habit.

Mr. THOS. PERKINS, of Holcot, Southamptonshire, sent a *SEEDLING*, which, however, from its present stage of development, did not exhibit any merit calculated to render it a variety worthy of cultivation.

Mr. CABLE, of Hayes, Middlesex, sent a specimen of a *SEEDLING* of very large size, being fourteen inches and three quarters in circumference, very oblate, ribbed,

* Several culinary varieties were, at the request of the Meeting, taken home by Messrs. Taylor, Davidson, and other members, to be tested as to their baking qualities; and the result thereof is as follows:—

Jolly Beggar breaks well, juicy, and of agreeable flavour, but not better than *Manks*, *Blenheim*, or *Keswick*, which are of the same season.

Closeburn Seedling boils into a perfectly white, slightly subacid pulp. *American Codlin* boils into a dark brown pulp, very sugary, rich, and juicy.

New Hawthornden very acid, boils and bakes into a beautiful soft, light-brown pulp, with less flavour than *Manks Codlin*, but also less acid, and requiring less sugar.

* The Secretary has to report that he had these baked, and tested them against *Magnum Bonum* from the market; and could not detect any difference in colour or flavour.

and tapering; colour pale green, handsomely striped on sunny side; flesh very firm; core not over sized; possessing a sharp acid, and not improbably a good culinary fruit. The Meeting desired that it should be exhibited again, and more than one specimen sent, in order that its baking properties might be tested; and also that information should be obtained regarding the productive qualities of the tree, as shyness of bearing is a defect generally common to the large handsome varieties of Apple.

JOHN LYELL, Esq., M.D., of Newburgh, Fifeshire, sent a SEEDLING called JOLLY BEGGAR, reported to be of a strong growth, and a fair cropper, fruit weighing from five to seven ounces each, and baking "exceedingly well." Dr. Lyell offers to furnish grafts. The fruit was above the middle size, very handsome, clear, pale, yellowish green, oblate, slightly ribbed, and somewhat tapering; flesh very firm, crisp, and juicy; core small, acid good and promising.

Mr. DAVIDSON, of Weston Shifnal, Salop, sent, with a large collection, an old variety, called AMERICAN CODLIN. It is described as the best early kitchen Apple in the district in which it is grown; and it was recognised as a favourite kitchen fruit in Covent Garden. Mr. Davidson offered to supply grafts, believing it to be worthy of more extended cultivation.

NOTE.—Grafts which are offered of valuable varieties will be obtained about the middle of January. Members desiring to partake in the distribution are requested to apply, by letter, to the Secretary, before the 1st of January, that a sufficient supply to meet their wants may be procured.

Mr. GODWIN again sent CLOSEBURN SEEDLING, which proves to be quite distinct from *New Hawthornden* (sent by Mr. Lane), the shape being more conical, less oblate; colour more green, less yellow; and the flesh boiling to a perfectly white, and less acid pulp, instead of a light brown, as is the case with the *New Hawthornden*.

NUTS.—Mr. SCLATER sent a variety called UNION FILBERT, raised in Devonshire, according to the grower's impression, between the *Filbert* and *Cob*: it is described as a great and certain bearer. The fruit had the appearance of having been produced by the cross described, the Nut being roundish, and approaching the *Cob* shape, and the beard long and frizzled; the shell was thick and hard; the kernel comparatively small, not generally filling the cavity; flavour deficient, not equal to the *Cosford*.

Mr. WIGHTON sent a collection of *Filberts*, which afforded a good opportunity of testing the above.

A DAY AMONG CHRYSANTHEMUM GROWERS.

It may be interesting to some of your amateur readers, to hear what is doing with this useful winter flower, as a town plant. For smoky localities, nothing surpasses it, and the excitement and interest it is creating in London is unlimited. I, being a very old grower of the plant, naturally feel some pleasure in ascertaining from the different growers what they are about with it; consequently, I took a general survey all round London, and the following is the result.

At Wimbledon, Isleworth, and Spring Grove, Hounslow, the Pompones surpass all imagination. They started the young plants in November, and kept them in 60-sized pots till February, in cold frames; then potted them into 48's, took out the centre or crown, and got from five to seven side shoots or laterals; when from six to seven inches long, pegged them down to the rim of the pot, giving a moderate supply of water; and when the plant was grown sufficiently to fill the pot with roots, gave another shift, and again stopped the shoots. When drawn to seven or eight inches high they were again pegged down, continuing so till the 1st of August. The plant then being in its blooming-pot, which is an 8-inch, was three-

parts plunged in a sheltered place in the borders; liquid manure given twice a day when the pot was full of roots, up to the time of showing colour, for blooming; pegging down attended to, and each branch placed in its proper position, to form a round, flat, equal, proportionate plant; and the foliage sprinkled three or four times a day with plain water. A little soot was mixed with the liquid manure.

By this treatment they have, at this present moment, plants averaging from three to four feet across, with about 300 healthy shoots, six inches high from the rim of the pot, all showing the flower-bud, and scarcely a discoloured, unhealthy leaf amongst them. They are perfect pictures of plants. Whatever size they will exhibit, I cannot imagine: they are monsters now, and have got nearly two months more time to grow.

Camberwell, Bermondsey, Hackney, and Stoke Newington, are all up to the mark, practising the same treatment. The amateurs almost equal the gardeners in the size and symmetry of their plants, and bid fair to have such shows as never were witnessed before.

Mr. Morgan, of Lincoln's Inn Fields, has grown twelve Pompones, on single stems, three feet high, with a head flat, eighteen inches to two feet across, full of shoots. This is quite a new feature, and the plants look very handsome; in fact, it appears they may be trained in any form or habit you please,—flat, pyramidal, or as standards,—and are so easy of management that anyone may cultivate them with success. They are sure to repay for the labour bestowed upon them.

The compost they are grown in is good, strong loam, rotten dung, and a little sand. A few of the growers at Stoke Newington do not peg down the plants at all, but let them grow without stopping, and train them like basket-making, round and round. These look very handsome when tied well, but give endless labour, and do not show well for exhibition, as you only see one side; whereas, by the flat system, you see all the bloom at once; but it only does for this purpose, as they cannot be staged in greenhouses. It only proves what can be done with training for shows, as they bloom all at one time, and look a perfect blaze of flowers.

As respects the large varieties, they are all looking very promising. Some are growing in 11-inch pots for exhibition, being opened out by thin long sticks, carefully arranged, to the diameter of five feet, with foliage to the bottom; they are copiously supplied with liquid manure, *stopped twice early in the summer*, and grown on one stem, from three to four inches clear of the pot, and plunged like the Pompones. The plants for cut blooms are sometimes grown three in a large 12-inch pot, in the same compost as the Pompones, and all laterals taken off as soon as they throw them out, till the flower-bud appears; then all shoots are taken off, to throw the whole strength of the plant into the bud. Others do not take this bud, but pinch it out, and trust to those on the shoot of the subdivision, which freely throws out three. Two are taken off, and one left for selecting the flower from, which is generally accompanied by three or four others. This succeeds very well with early varieties, but with the late ones I have some doubts of its being successful, if a sharp frost should set in; otherwise, if an open, mild season, they do much better.

The border plants are treated the same as above, if grown for cut blooms. Nearly all the large varieties are showing their past bulk, and are as large as a Pear. The last lateral does not show yet.—SAMUEL BROOME, *Temple Gardens*.

FERGUSON'S ELASTIC BANDS FOR PEACHES.

UNDER ordinary circumstances, loosening the surface, watering, mulching with manure or leaf mould, &c., and keeping the ground in a medium state of moisture, will prevent the fruit falling before matured. But, in cases where the trees are trained on walls, upright trellises, &c., or the fruit, from necessity, is allowed to grow on the underside of a flat trellis, it becomes almost an impossibility, if the fruit is what it ought to be, *large*, to prevent its weight from causing it to fall.

A case of the latter fell to my lot this season. In January last, I had the sashes taken off a house for repairing and

painting; and, wishing to have the latter thoroughly dry before putting them on, I gave the bullfinches, &c., a chance of a feast on the buds, and they did not lose the chance, having swept off all on the upper side. The consequence was, that, although I had a splendid crop, the fruit was all underneath; and as they varied in size, from nine inches to eleven inches and a half in circumference, their sockets connecting the fruit with their stalks could not support their weight. A score, if not more, on the floor one morning, gave me proof that something must be done, as I have not the Crystal Palace Company, but Covent Garden to do with. Tying on again, like the potters, would be a losing game. Therefore, I lost no time in having those on the trees tied up with tape, strips of flannel, about one-third of an inch in width, &c. The flannel did very well, but elastic bands better. Keeping, of course, to one-third of an inch in width, and, for the fruit of established trees, about ten inches to fifteen inches in length, with a small buckle at one end; and, judging by what I have seen at the exhibitions, four inches to eight inches would do very well for the potters. It may be thought that these bands will not allow full play for the swelling of the fruit, and will leave their marks. No such thing. Thin flannel, or, what I have said is better, elastic bands, which, of course, can be made almost transparent, if buckled or tied on,—say, a fortnight before the fruit is ripe,—gives way, and will hold on the fruit till it drops to pieces. If this plan is adopted, farewell to complaints, under proper management, of fruit falling. Farewell to nets, loads of hay, moss, and other comfortable beds for earwigs, and other vermin. Besides, in gathering the fruit, these bands have only to be unbuckled, the fruit placed either in the basket or box, and sent with them, which does away with the necessity of touching them with a finger. As these bands will do again and again, and last many years, I hope some firm will take it up, and let us have them cheap, by the hundred or thousand. There is a field open for hundreds of thousands,—aye, millions,—when they come to be known.

I hope, after this, such deplorable sights and plights as are to be seen amongst the potters on exhibition mornings, before they tie on their fruit, will, henceforward, belong to the past; and that they will thin out the fruit on their pet trees in a practical manner, tie them up a fortnight before they are ripe with Ferguson's Elastic Bands, leave them on till placed on the exhibition tables, and then, and not till then, unbuckle. —D. FERGUSON, *Stowe, Buckingham.*

ENTOMOLOGICAL SOCIETY'S MEETING.

THE August Meeting of the ENTOMOLOGICAL SOCIETY was held on the 2nd ult. The chair was occupied by J. O. Westwood, Esq., M.A., Vice-President. Amongst the donations were specimens of the rare *Limnæa phragmitacea*, presented by Mr. Sealey.

Mr. Knaggs exhibited a box of insects from Demerara, which had been prepared with a weak solution of bichloride of mercury and arsenic.

Mr. Waring exhibited a new and beautiful addition to our native list of Moths, namely, the elegant *Notodonta bicolor*, a specimen of which had been taken in the winged state, on the 1st of July, by Mr. Bouchard, near Killarney. The larvæ of this beautiful insect feed on the Birch.

Mr. Joseph Hunter exhibited two rare British Moths, *Spilodes palealis* and *Trochilium chrysidiforme*, recently taken at Folkstone.

Dr. Wallace exhibited an apparently new species of Moth, belonging to the genus *Nola*; also specimens of *Hepialus lupulinus*, of which he had taken great numbers. The majority were, however, males,—not more than one female out of fifty individuals having been secured.

Mr. Francis Walker read the descriptions of numerous new exotic species of Neuroptera, contained in the collection of Wm. Wilson Saunders, Esq.

Mr. Stainton exhibited specimens of *Camptogramma fluviala* and *gemmata*; the former of which proved to be the males, and the latter females of the same species.

Mr. Westwood called the attention of the members present to the great advantages to be derived from carefully extending the legs of Lepidopterous insects as well as their wings. Not only

in an artistic point of view, but also as exhibiting important generic characters, it was desirable that the legs should be set out in the position of walking. Mr. Westwood also read letters from Mr. Neitner and Mr. Thwaites, from Ceylon, addressed to Mr. Spence, announcing the discovery of a Strepsipterous insect within the body of an ant, of that island. Drawings of the insect had been prepared by Mr. Westwood, who read a description of this new parasitic insect, which he named *Myrmecolax Neitneri*.

CONCLUDING NOTES ON SEA FLOWERS.

(Continued from page 397.)

IF the reader will refer to page 354, of Vol. XIX. of THE COTTAGE GARDENER, he will there find representations of several of the most popular of the families of *Sagartia* and *Bunodes*, together with some descriptive remarks and directions on management. Making the same reference myself, for the purpose of avoiding repetition, I find that the numbers have not been attached to the block correctly, and I will, therefore, beg the reader to correct as follows:—1 and 2 are correct; mark 3 opposite the small Anemone on the extreme left, at the foot of the branched Algæ; 4 alter to 5; 6 correct; 7 alter to 5; and write seven under the dark-faced, starry Actinia, the second from the left-hand at the bottom. Above those two in the foreground, on the left-hand, is one in the distance fully expanded, against which mark 4, and read the description again.

SAGARTIA ANGUICOMA.—Represented to perfection by Mr. Sowerby, in his admirable work; also delicately touched on wood by Mr. Voyez, in my own "Book of the Aquarium." One of the heartiest of the tribe, almost always expanded, and perpetually changing its form. Relishes a shred of mutton now and then, and looks plumper after it. The usual colours are light buff and creamy white, broken by soft lines of brown. There are five rows of tentacles, very long and snake-like. Hence it is called the Snaky-locked Anemone. This sometimes lets go, and floats about; so that if the water is agitated, it may spin away into a cranny among the rockwork, where it will again take hold. Indeed, it seems to like the dark, and will frequently shift its position, to get under the shadow of an arch. The longitudinal plates are very distinctly visible in this species when it stands upright, and is moderately distended, and an experienced eye will also detect the bundles of filaments coiled up between them.

SAGARTIA BELLIS.—This, the *Daisy Anemone*, is easily obtained, and as easily preserved. It is very pretty, though generally of a quiet colour; and the density of its fringes of tentacles, and the distinctness of the open mouth, give it a close resemblance to a double Daisy. It does not bear handling, and is sure to perish if the water continues foul for any length of time. There are several varieties, of which two occur most frequently. In one of these the prevailing colour is a warm chocolate, with the disc regularly striped with crimson or scarlet, and the lips tinged with bright purplish blue. The tentacles are brown, varied with shades of white, and sometimes with a bluish-grey and slate. The Daisy is a capital feeder, and will eat almost any food—fish, meat, oysters, worms, &c.; but care must always be taken to remove any particles that are not taken, to prevent putrefaction. The best means of removal is the dipping tube. The best picture I have yet seen of the Daisy, is that in Gosse's "Rambles on the Coast of Devon." In the "Book of the Aquarium," the character is truthfully given, but there is a want of detail.

SAGARTIA TROGLODYTES.—This takes its classical name from the *Troglodytes*, the Icthyophagi of Herodotus, who dwelt in caves along the Arabian Gulf. It hides in holes, and sometimes buries itself in sand, showing its head and frills of tentacles above the surface. It is easily obtainable, and lives long in the tank. This and the Daisy, and the common "Mes," have been most prolific with me, scattering their young about the vessels in profusion, and giving the rockwork the appearance of being covered with animated pellucid beads.

SAGARTIA DIANTHUS.—This is the *Plumose* or *Carnation Anemone*, and the grandest of the whole tribe, and the queen of the tank. Those who are familiar with its splendid ap-

pearance when full grown, and mounted high on a block of granite in the middle of the tank, know, that to do justice to its graceful majesty of form, its frequent changes and shifting motions, and, above all, its exquisite delicacy of colouring, and translucency, is altogether impossible, either by pen or pencil. Six inches high, and nearly four in diameter, erect and queen-like in its attitude, with an immense head of countless tentacles, so densely crowded and puckered as to form a profuse fringe, which falls over into puckered and irregular masses, like the handiwork of fairy fingers, that excel in weaving the sea foam into textile wonders. The colour pale amber, soft orange, or alabaster; the column streaked with vertical lines, and so translucent, that, when against the light, we see almost through the creature, and can hardly take our eyes off when it is in one of its fits of transformation,—becoming now a balloon, and next a pair of oblate spheroids, set one upon the other, and the fringes of waving tentacles all the while agitated and moving as if a Peri were breathing amongst them. An indescribable sea flower, animated by the soul of beauty! And, with all its lustre and magnificence, it is long-lived, feeds freely, soon gets familiar, so as not to shrink either from the footfall or the passage of the hand over the glass, and so takes precedence of every one of the curious and beautiful creatures committed to the ocean garden. Mr. Gosse says, “it is excelled in beauty by *Crassicornis*.” No, Mr. Gosse, it is not. *Crassicornis* is dazzling in his colours, but here is grace, delicacy, easy-flowing outlines, and incessant change of form, such as *Crassicornis* never attempted, for his grandest feat is to turn his stomach inside out, and become defunctibus next morning. But Mr. Gosse does justice to this beauty, both in description and representation. Plate V. of “The Aquarium” vindicates the claim of *Dianthus* to a regal place in the deep, though it is still short of the mark, and must have been sketched from a specimen not so densely frilled as usual. Mr. Sowerby devotes twelve lines to it, in a book of 320 pages, and both he and Mr. Humphreys have altogether failed in drawing it. The whole subject, however, was new to Mr. Sowerby; and I defy anyone either to describe or figure *Dianthus* decently, without first acquiring an ancient acquaintanceship with it. I claim the merit of giving the best representations of it on wood yet accomplished. In the “Book of the Aquarium,” the character is admirably rendered by Mr. Voyez, and, in the end here presented to the reader, I think THE COTTAGE GARDENER need not be ashamed of Mr. Saunders’s attempt at a most difficult subject.

But about the structure of this wonder of marine life. The column is entirely free from sucking glands, and the summit is crowned with a thick, fleshy rim, within which is a deep groove. The disc is puckered into numerous foldings, and the tentacles are confusedly crowded, so that it requires frequent and patient observation to detect the nature of their arrangement. Those next the mouth are stouter in substance than those forming the outer fringes; and from the first ring, which is about a third of an inch from the delicately-chiselled lips, they succeed in greater and greater numbers, till towards the exterior they form so close and rich a fringe, that it is difficult to separate them by the eye, and quite impossible to count them. This species is very abundant, and large specimens on shells and stones are frequently surrounded by crowds of little ones, over which they seem to keep guard. It frequently produces young in the tank. The young are beautiful objects, and as eccentric as their parents, in puffing themselves out with water, and again contracting either to slender columns, or to flat, button-like discs. *Dianthus* is best kept by itself, owing to its habit of frequently throwing off a gelatinous film, which collects at the bottom, unless regularly removed by means of a dipping tube. All the *Actinæ* do this, but *Dianthus* more than any, and the process is simply the sloughing off of the outer skin in a manner similar to toads and snakes. The water in which *Dianthus* is kept should be always bright and pure, and well aerated; and the creatures do not keep their beauty long, unless occasionally fed. It throws out a profusion of white threads if irritated, and should be touched as little as possible.

BUNODES CRASSICORNIS.—This, the *Thickhorned Anemone*, may, if you are fancifully disposed, be called the king of the tank. But his majesty is like an Indian prince, extravagant,

luxurious, and short-lived, and hence it is not often kept; and there are few who can manage it with any degree of certainty. One of immense size, which I brought from the south coast two years since, I fitted up a small vessel of four gallons expressly for; and, by feeding and aerating, kept him four months, and then lost him through having to leave home on a tour northwards, so that he was neglected for a fortnight, and, though alive on my return, had set out for the grave, and refused to be called back. I have kept a great many, and have had young produced, but the possession was always temporary; and this summer, having too much on my hands to give the attention requisite in hot weather, I got rid of my last two, and will not be bothered with them again till spring, when, from February to the end of May, one may expect to keep anything.

Crassicornis attains immense size, but it never reaches a tall column. The tentacles are thick, and boldly set out in the form of a huge star; and the most common colour is a fulvous red, blotched with bold dashes of green, orange, and white. But, in truth, this species occurs of all colours, and is as showy as a harlequin, and as gaily spotted. When first taken up, it is generally covered with grit, which must not be washed off. In a few days the creature drops the pebbles, and stands up smartly in its showy dress, and you may see that the bits of sand and shell were held by the wart-like glands, which are now conspicuous all over the body, and, which have a power of suction. The tentacles are so plump and blunt, that having only once seen a specimen, or a good representation of one, you would know it again directly. The plumpness results from its free absorption of water, and when lifted out of it, it frequently squirts the water from the tentacles insultingly in your face, and in a manner that alarms people not used to such things. It never emits filiferous threads. It is of immense strength, and indescribable voracity. I have seen specimens seize a stickleback or goby, and double him up in the grasp in an instant; and, before the writhings of the poor fish were over, he would be tucked into the vast mouth, and go kicking to his gastric tomb. Even there he may kick once more, but he is soon converted into *Actinia*. To have a fair chance of keeping this capricious creature, it must have abundance of oxygen, never be handled or disturbed, and be fed as often as it will take food, and every scrap not taken immediately removed. A powerful light, a hot day, or a little neglect, may induce in it a suicidal fit, when out come the beautifully-striped lobes of the stomach, and you may make up your mind that its reign of glory is coming to a speedy close.

BUNODES GEMMACEA.—Though it is rather fatiguing both to writer and reader, when each succeeding object has to be described as more beautiful than the last; still I think we must allow “the gem” to be, in its way, the most beautiful Anemone we are at present acquainted with. It does not compete with *Dianthus* or *Crassicornis*, in size or gorgeousness, but bears such relationship to them as Auriculas do to Roses and Dahlias. It is an exquisitely beautiful creature, and once identified will never be forgotten. The most striking feature of the gem is its regular arrangement of gem-like warts, which run in lines from the top to the bottom of the column; and the tentacles are beautifully banded from base to tip with gay colours on a pearl-white ground. It is as beautiful when closed as when open, and it frequently closes for several days together. The lines of warts radiate regularly from the top of the closed disc; usually three lines of faint dots and then a broad and conspicuous one of larger dots, and of a lighter colour. There are generally six rows of principal dots, with three of the fainter rows between them, so that it is a perfect Mosaic of gems. The colours vary considerably, and those of a pearly white are as lovely as those more richly coloured. All the colours of the rainbow, and some not in the rainbow, are exhibited by this sparkling gem of the sea; but rosy pink, violet green, and grey, are the most common; and, in some specimens, all the several colour effects are combined; and when expanded, the tentacles being few in number, and very distinct, take the form of a star, in which rubies, emeralds, turquoises, and splinters of amber, are all worked into the pattern elaborately, and with precision. It is delicate, will not exist in foul water, requires an abundance of oxygen, and must not be in a strong light. When once acclimatised, however, it often proves long-lived, and occa-

sionally presents its keeper with a brood, which are jerked forth one at a time, and generally make at once for the front glass, to show themselves.

ACTINIA MESEMBRYANTHEMUM.—Having described this pretty fully in previous papers, and especially at page 354, Vol. XIX. (No. 493), I need not here do more than name it as the hardiest of its race. Indeed, it is hard to kill, and seems as happy for a time in a jug of beer, or a can of soap-suds, as in bright sea-water, and can be made into two at any

time, by simply cutting it in half. It is very prolific, too, in confinement. Last spring I had an immense number born to me, but they were speedily eaten up by the hermit crabs that haunted the same vessel; and the mention of the circumstance may serve as a wrinkle for those who would not willingly lose the products of their own marine fisheries. The safe rule is to assort the creatures, so that they can do no harm to each other. When indiscriminately jumbled together, accidents are to be expected.



1. *Sagartia dianthus*
2. *Bunodes gemmacea*

3. *Bunodes coriacea*
4. *Corynactes Almanii*

5. *Porphyra laciniata*
6. *Plocamium coccineum*

The cut represents *Sagartia dianthus*, *Bunodes gemmacea*, *Bunodes crassicornis* or *coriacea*, and *Corynactis Almanii*. The broad-leaved Alga is *Porphyra laciniata*. The other on the left is *Plocamium coccineum*. They are both of the red class, and useful to those who have had a little experience;

but beginners should be content with green Algæ until they discover, by experience, that a very strong light and utter stagnation of the water are as injurious to the plants as to the animals.—SHIRLEY HIBBERD.

THE ROYAL FAMILY OF BEDDING PLANTS.*

As soon as Her Majesty returned from Berlin, the whole of the Royal Family came up to Surbiton, by the South-Western Railway, to my house, and I had the honour of taking them down to the Experimental Garden, and to introduce them to the ladies there. *Her Majesty's* dress was of deep lilac, striped Carnation fashion; *Princess Alice* wore the same pattern, in a lighter shade; *Princess Helena*, a charming cherub, in French white, spangled with silver; *Princess Louisa*, also in French white, but striped like her mother's dress; and the little, laughing, pretty dear, the *Princess Beatrice*, was white, and all white, and as sweet as a Rose. The younger *Princes* were dressed a good deal like the girls. The *Prince Consort*, however, and the *Prince of Wales*, and the sailor *Prince*, were only differently dressed from what we usually see them about here. It was an honour, certainly, to see so much at the Experimental. But I shall tell how it was. A collection of twelve double Petunias, seedlings of 1858, has been named after the Royal Family, by Mr. Scott, of the Merriott Nurseries, Crewkerne, Somerset, the raiser of them. He sent out flowers of them to me, and I thought them exquisitely beautiful; but, knowing how double Petunias turn out in the beds, I expressed a doubt about these faring much better, and Mr. Scott agrees with me, that no double Petunia is yet safe for beds. But they make charming pot

plants to decorate the greenhouse, the conservatory, and all show-houses during the summer, for which they are as easily managed, and look as well, in their way, as Fuchsias. Indeed, we want such things for the million, who cannot afford to have Dendrobiums, and other stove plants, to keep their places gay after the beds are planted, and the Pelargoniums are over. Of course, those with small flower gardens, and who dress them and keep them up in the first style of fashion, will try to have beds of double Petunias, and will, doubtless, succeed, as they do with other things, which puzzle and baffle first-rate gardeners, who have too many irons in the fire already.

Along with these, Mr. Scott sent another collection of striped single Petunias, which are as distinctly marked as Carnations and Picotees, one of which is just as large as the *Magna coccinea* at the Crystal Palace. And there are other double Petunias besides the Royal Family, one of which, a pure white, is as large as a middle-sized double, white, Camellia; and another white has the centre petals as broad as those of the large *Gardenia*.

Along with them were some first-rate Verbenas; one of them, called *Syren*, is the nearest to blue of all the Verbenas,—*Blue Bonnet* being, I believe, the next best blue. Well, as one expense is sure to bring on another, and knowing that Mr. Scott has an experimental ground for Verbenas, I asked

* This was referred to last week, but omitted.

him to make me out a list of all the best in each class. He did so, and something more: he sent me the following descriptive list of ever so many of them. He has twenty-nine of the best in the list, which list he has shown to some first-rate growers of Verbenas, each of them pronouncing the descriptions as very faithful. One of them said it was the most useful account of Verbenas he had ever seen. I believe it to be a valuable contribution, and the next step I should like to see taken, would be a very careful abridgement of the forty best kinds to twenty, and then to twelve or ten kinds, so that all might know exactly what would answer their purpose best. I cannot make the selection myself. But I can now say which are the best Verbenas to mix with the variegated Alyssum, and *Lobelia speciosa*, to make the first best row in a fashionable ribbon. *King of Scarlets* is Mr. Scott's preference, and the original *Melindris*, which I thought was dead and gone long since, must be as good as any king or queen that ever lived. I never yet saw a better scarlet Verbena than *Melindris*. It was the original kind, and I recollect the first season it flowered in England, as well as I do the hot summers of 1826, 1846, and 1858. The first scarlet Verbena was flowered in England in 1827, by Mr. Perry, gardener to John Hawkins, Esq., Bignor Park, Sussex. The seeds were gathered in the neighbourhood of Buenos Ayres, by Mr. Pousette, and it was figured in the "Botanical Register," from the garden of the Earl of Egremont, at Petworth. This Verbena is *Melindris*, and, being yet alive, and the best for any purpose, I shall order it from Mr. Scott, for the experimental ribbon. But dreading another kind of ribbon from the Editor, for taking up so much room, here is the list.—D. BEATON.

NOTES ON VERBENAS, MADE AUGUST 11, UNDER A BROILING SUN.

Admiration. Light lilac, with white eye; free flowerer, medium grower. Colour destroyed by the thrips.

Admiral Lyons. A pure white, with small purple eye; abundant bloomer, free grower, and good bedder. Stands the sun. A1 for a white bed.

Aigle de Meaux. Purplish crimson; large truss, strong grower. Fades in the sun, and only fit for a mixed border.

Amarantina. Dark lilac; fine, large, light eye; free flowerer, medium grower. Stands the sun well.

André. Dark purple, changing to a lighter shade; free grower and free flowerer. Does not stand the sun.

Andromaque. A pretty, neat little white, with small pink eye; free flowerer, but grows weakly.

Aurora. Beautiful ruby, and has a yellow eye; free flowerer, but a weak grower. Fine in sunshine.

Black Prince. Unique in colour, dark plum, with darker velvety centre; free flowerer, but spare grower. Is superseded by *Negro Girl*.

Blue Bonnet. Dark bluish purple; free flowerer, medium growth; but superseded by *Syren*.

Brightonia. Reddish scarlet, changing to brick-red in the sun; free flowerer; medium, compact growth; pretty; but fades in the sun.

Brillante de Vaise. Ruby scarlet; strong grower, free flowerer. Stands all weathers well. First-rate for a large bed. A1.

Cardinal Wiseman. Orange scarlet, or, rather, salmon scarlet; free flowerer, large truss, free grower, good bedder. Stands the sun well, and makes a nice match-bed with *Lord Raglan*.

Celine Mallet. A pure pearl white; dwarf habit and free flowerer. A nice edging plant.

Chauverii. The finest crimson scarlet yet out; free flowerer, medium growth. Stands all weathers. Good bedder. A1.

Commander-in-Chief. Bright dark scarlet, shaded down to light scarlet in the margin; fine, clear eye; beautiful, but spare-growing sort. Stands bright sunshine.

Crimson Perfection should give way to *Crimson King*, being similar in colour.

Crimson King. A beautiful crimson, with large light eye; free flowerer and good grower. Stands the sun pretty well.

Cudigo. Only *William Barnes*, which see.

Cupid. Rosy purple, with fine yellow eye; free flowerer and free grower.

Celestial. Rosy pink, or peach; an immense truss, fine flowerer, profuse bloomer, and medium growth. Stands the sun well. A nice match for *Etoile de Venus*. A1.

Climax. Lilac purple, very changeable; should have been called *Chamelion*; a profuse bloomer, free grower, and fine bedder. A1.

Dazzle. Pretty dwarf scarlet. Good edging sort.

Defiance. Still the best scarlet self. Stands all weather well.

Dred. A bright dark purple, of *Ariosto* colour, with a small bright eye. A neat and well-formed flower. Stands the sun well.

Duc d'Almada. Crimson; one of the earliest-flowering kinds, and a first-rate bedder. Stands all weather well. A1.

Duke of Cambridge. Dark bluish purple, with a large white eye; a profuse flowerer and fine bedder. A1 of its colour, of which there are several.

Duke of York. Dark crimson. An old sort, but still good; *Melindres* habit, free bloomer, and stands the weather well. *Emperor of China* is better.

Duchesse d'Aumale. Still the best lavender out; flowers very early, and continues late. Requires to be well pegged down.

Emma. An old sort, not now wanted.

Emperor of China. A very dark crimson, of the *Melindres* habit; bright small eye. A good bedder, and stands the sunshine well.

Etoile de Venus, like *Celestial*. The largest truss and pip of any Verbena, and a nice bedder. Stands the sun well.

Eugénie. A neat-growing lavender flower, with light centre. A weak grower.

Eva. A yellowish white; of medium growth.

Evening Star. A reddish scarlet, with fine light centre. A striking variety, but fades a little with adverse weather. Free bloomer, medium growth. Nearly A1.

Field Marshal. An *Ariosto*, with a large white eye. First-rate bedder, and stands the sun well. A1.

Géant des Batailles. Fine crimson. Of first-rate qualities. A1. Stands the sun first-rate.

General Simpson. Carmine lake, with bright eye; large, fine truss. Of first-rate form, free flowerer, and fine bedder. Stands all weather. A1.

Giralda. A bright-shaded blue, with light centre. Good, compact habit, free flowerer, of medium growth. Stands the sun well.

Glowworm. Shaded purplish crimson, with whitish eye; medium grower and free flowerer.

Great Western. Light rose, with large white eye. The best white rose out; free flowerer, good bedder, and stands any weather. A1.

Grandissima. A pure white, like *Mont Blanc*, but superseded by *Mrs. Hosier Williams*, &c.

Hector. Not quite so good as *Ariosto*; nearly the same colour, &c.

Jean d'Acre. French white, with fine carmine eye; free flowerer, free grower, and good bedder. A1.

Jessica. Rose, with dark crimson centre; fine truss, free grower, and profuse flowerer. Good bedder.

Jerome. A small form of *Ariosto*, with a light ring in the centre. Very free flowerer, and neat bedder; of compact growth. A1.

John Edwards. In the way of *Brightonia*, bright brick red, with fine yellow eye. Good form, free flowerer, free grower; but changeable, and suffers from sunshine.

Julie de Courseilles. Somewhat like *Jean d'Acre*, but not quite so good,—more muddled in the centre.

King of Roses (Weatheral's). A too changeable beauty,—from bright cherry to dirty pink.

King of Purples. A well-formed flower, free bloomer, and good bedder.

King of Scarlets. No Verbena is more bright: it is unequalled for a small scarlet bed; a truly beautiful gem, with large yellow eye. A very good sort for an edging, with *König* and blue *Lobelia*. Stands any weather. A1.

Lady Cardross. A poor brick red, not worth growing.

Lady A. Foster. A ruby red, with bright eye, but poor grower.

Lady Lacon. Superseded by *Bessy Bell*.

Lady Kerrison. A light peach, inclining to white, with a

light crimson eye; free flowerer; medium grower. Stands the weather well.

Lady Palmerston. A fine, dark, bluish purple, with large light eye. This, *Sims Reeves*, and *Standard Bearer*, appear to be nearly, if not all alike. Splendid sorts, but completely destroyed by thrips, as are most of the violet colours. For pot culture, they are splendid. A1.

Lady Peel. Like *Ariosto*, with a fine white eye. A good grower and fine flowerer.

Lady Turner. A beautiful rose, and a very pretty flower, of good form; free bloomer; medium, compact, growth. Stands the sun well. A1.

L'Argentine. A very fine, pure white. Nearly as strong a grower as *Mrs. Holford*. A1.

La Pensée. Like *Blue Bonnet*; but both superseded by *Syren*.

La Stella. A glorious crimson scarlet; very free flowerer; good grower and good bedder. Stands the sun well. A1.

Lord Lyons. Dark plum, with fine, clear, yellowish eye; free flowerer, and most compact habit. Stands the sun well, and is not so easily spoiled by the thrips. A1.

Lord Raglan. Fine orange scarlet; abundant bloomer, free grower, and altogether one of the finest Verbenas out. Stands the sun well. A1. If I were asked which is the best Verbena in all respects, I would say *Lord Raglan*.

Louis Napoleon. A very dark crimson; fine flowerer and fine grower. Stands the sun well.

Loveliness. Rosy purple, with fine white eye, and altogether a very beautiful flower. Does not suffer from the sun very much.

Madonna. A lovely French white, with purple eye; very free bloomer; medium, compact growth; and has a soft, pleasing appearance. Fine bedder and pot plant. A1.

Madame Moret. A pretty rosy carmine, with bluish eye; free flowerer, medium growth, and very pretty.

Magnet. In the way of *Climax*, but more rosy; changeable, but beautiful; free flowerer, free grower, and fine habit.

Manteau Imperial. Like *Brillante de Vaise*, but rather more scarlet. Strong grower, and fine for large beds. A match for *Brillante de Vaise*. A1.

Marco. Too like *La Stella* to keep.

Manrico. Supersedes *King of Sardinia* and *Rouge et Noir*. A fine, free flowerer; but grows stronger than these others.

Marchioness. A rosy lilae, with shaded purple eye; unique colour; free flowerer, good grower, and makes a fine neutral bed.

Meteor. Almost like *Evening Star*, and not wanted.

Melindris. The first Verbena introduced to this country, belonging to the trailing, showy section, so widely cultivated at the present day. It is still one of the brightest scarlets, and a desirable sort for edgings and small beds.

Melindris alba. A pure white, of compact growth, free flowerer, and a nice little sort for edgings.

Merry Monarch. Orange scarlet, with dark centre. Habit of *Melindres*.

Miss Trotter. Bright dark scarlet, with yellow eye; most profuse bloomer; compact growth; not a fine-formed flower, but a most effective one, in garden decoration, for small beds. Stands bright sunshine well. A1.

Matchless. A splendid, dark-bluish purple; free flowerer, free grower, and good bedder. A1.

Mrs. Archer Clive. A very dark crimson, almost, if not the darkest out; free flowerer and free grower. Stands the weather well. Match bed for *Louis Napoleon*. A1.

Mrs. Beecher Stowe. Light pink, nearly white, with shaded purple centre. A lovely flower, and most profuse bloomer; free grower and good bedder. A1.

Mrs. Bullock. Fine rosy purple, with white; good bedder and free flowerer; and like *Lady Peel*, for which it is a good match bed.

Mrs. G. F. Caley. Like *Mrs. Beecher Stowe*, with more distinct eye.

Mrs. Gerard Leigh. Beautiful lilae; fine, large, white eye; free flowerer, compact grower, and good bedder.

Mrs. Holford. The largest and finest white out. The best match bed for it is *L'Argentine* (*L'Argentine* (?) of nursery catalogues). Which is right? *L'Argentine* seems to express the silvery colour well. A1.

Mrs. Hosier Williams. A pure and beautiful white. It is my match bed this season with *Mrs. Holford*, but is hardly strong enough to do it. No white, however, in all points, beats this. *Moonlight* is hardly different. *Sunlight* would have been a better name. A1.

Mont Blanc, *Grandissima*, *White Perfection*, and several other whites, must give place to the two ladies above. I have two circular beds of *Mrs. Holford*, and two of *Mrs. Hosier Williams*. One of each is surrounded with a blue margin of *Lobelia speciosa*, and they are charming.

Mrs. Mildmay. Rosy purple, with fine yellow eye; free flowerer, free grower, good trusser, and good bedder. What more can you want?

Mrs. Woodroof. A larger *Defiance*. When nicely pegged down, makes a fine large bed.

Mousa Pacha. Very dark plum, with fine light eye.

Mons Modeste. A fine-formed flower, but not required.

Mountainii is the same, and is older.

Nigricans. A very good dark crimson flower.

Orb of Day. Ruby scarlet; a very free flowerer; dwarf, compact habit. Good edging sort.

Orlando. Dark bluish purple; good light eye; profuse bloomer; good grower. Stands the sun well.

Optima. Deep rosy scarlet; free flowerer; free grower; good bedder. A first-rate sort, although not A1.

Phæbus. Crimson scarlet; free flowerer, compact dwarf habit, good eye. Makes a splendid edging.

Prince Edward. Very like *Standard Bearer*, as also *Sims Reeves* and *Lady Palmerston*. See *Standard Bearer*.

Prince of Prussia. A beautiful dark plum-colour; free flowerer, free grower, and dwarf habit. Very good.

Prince of Oude, like *Violacea*. A beautiful dark plum, with fine centre.

Prince of Wales. Bright rosy scarlet; free flowerer, good grower, fine truss, and large light eye. Something like *Evening Star*. A1.

Purple King. Very different from the *King of Purples*. A profuse bloomer, and the best purple bedder out. A1.

Queen of Roses. Superseded by *Glowworm* and *Lady Turner*.

Queen of Oude. Like *Violacea* and *Prince of Oude*.

Rosy Gem. Deep rose, fine light eye; free flowerer, free grower, and beautiful form. A1.

Red Rover. A free-flowering sort, like *Melindres*. A1.

Rougerii. Vivid crimson scarlet; the finest formed Verbena out. Free grower, but rather spare flowerer. A1.

Reine Victoria. Brick colour, with beautiful crimson centre. Unique.

Sarah. Dark lilae, with white cross stripes. This, *Eclipse*, and *Madame Lemonier*, are fine-striped sorts, and very pretty.

Scarlet Gem. A pretty, compact, small flower, with yellow eye; fine form, compact growth. Good.

St. Margaret. An old, and first-rate, free-flowering, free-growing, and fine-bedding sort. A1.

Sir Joseph Paxton. Rosy crimson, with large yellow-whitish centre. Profuse flowerer and free grower. Fine bedder, and A1.

Sims Reeves, like *Standard Bearer*.

Syren. The nearest approach to a blue yet made. Good flowerer and good grower. A1.

Venus. A lovely soft white, with clear purple eye. In all respects a first-class flower, and good bedder. A1.

Victory. Rosy purple, with large light eye; free grower. Good for a large bed. Stands the sun well.

ADDENDA.

Cupid. Rosy purple, fine yellow eye. Good.

Bessy Bell. A pretty light rosy lilae, with fine white eye; free flowerer and good grower. Better than *Annie Laurie*.

William Barnes. A beautiful dark-shaded crimson; free flowerer and good grower. A nice pot plant.

Empress Elizabeth. A nice little thing, fit for rockwork.

Negro Girl. A beautiful dark plum colour; free flowerer and free grower. A nice match bed for *Indian Chief*. A1.

John Scott. A splendid scarlet, with small bright eye. This has the habit of *Géant des Batailles*; an abundant flowerer, and first-rate bedder. When well known, I have no doubt it will be found to be hardly second to any. A1.

List of all those given as A1, and which I consider as the cream of my collection, which numbers over 300 sorts:—

- | | |
|-------------------------|--------------------------|
| 1. Admiral Lyons | 21. Madonna |
| 2. Brillante de Vaise | 22. Manteau Imperial |
| 3. Chauverii | 23. Miss Trotter |
| 4. Celestial | 24. Matchless |
| 5. Climax | 25. Mrs. Archer Clive |
| 6. Dne d'Almida | 26. Mrs. Beecher Stowe |
| 7. Duke of Cambridge | 27. Mrs. Holford |
| 8. Evening Star | 28. Mrs. Hosier Williams |
| 9. Field Marshal | 29. Optima |
| 10. Géant des Batailles | 30. Prince of Wales |
| 11. General Simpson | 31. Purple King |
| 12. Great Western | 32. Rosy Gem. |
| 13. Jerome | 33. Red Rover |
| 14. King of Searlots | 34. Rougerii |
| 15. Lady Palmerston | 35. St. Margaret |
| 16. Lady Turner | 36. Sir. Joseph Paxton |
| 17. L'Argentine | 37. Syren |
| 18. La Stella | 38. Venus |
| 19. Lord Lyons | 39. Negro Girl |
| 20. Lord Raglan | 40. John Scott |

Perhaps there could hardly be selected from any class of flowers a more showy galaxy of beauty than is presented by the above forty sorts of Verbena. I have all my sorts planted alphabetically, in a straight line, and the above are the choicest in my collection. My row measures above 400 yards, and, being all mixed and placed at one yard apart, you may imagine how beautiful such a line looks. Besides the above long row, my Verbena beds cover a space, without interruption, equal to ———* square feet. Having such an opportunity of giving you a descriptive list, taken in the hottest weather, from, I may safely say, one of the finest collections in England, I could not resist the opportunity.

ON THE ORIGIN OF SWARMING

OUR best apiarians consider that the "idea of swarming originates with the old queen:" but Mr. M'Lellan, at page 228, objects to this, and seems to think that he has found a clue to establish his belief that the primary cause rests with the bees. He bases this on the fact of having seen them defending the young queens in their cells from the deadly attacks of the old one. But, unfortunately for his hypothesis, his was an exception to the rule of swarming; and only happens when the old queen does not leave the stock. In general she is gone with the first swarm, eight or ten days before the bees commence their important office of not only guarding, but also feeding the young queens, while imprisoned in their cells, until the first hatched ones, or rivals, are gone with the next swarms.

Having spoken so lately on this part of the subject, it would be idle to dwell more upon it. I may observe, however, that what I then stated, and now state, is nothing new, for Dr. Dunbar spoke of it more clearly about forty years back, in the *Edinburgh Philosophical Journal*, as well as in Loudon's *Gardener's Magazine*, for 1839. If Mr. M'Lellan doubts this, I can send him the latter publication by post. And though I differ from Dunbar on some trifling points, yet I consider that we are indebted to him for the best account of the *rationale* of swarming.

I have now to notice that Mr. M'Lellan objects to what I said at page 42, respecting a few bees laden with pollen mingling with a swarm, instead of entering the stock. I said so, merely with a view to show that the bees were not always aware of the exact time when the queen would lead off a swarm. To which he replies, "This mode of reasoning appears to be unsound, inasmuch as it makes the exception govern the common rule." I think this requires no comment, except that his words might be better applied to what he said on the cause of swarming, already noticed. And I pass on, to state something else connected with this subject, that of the bees having another place beforehand to fly to, and previously clustering and idle for days outside the hive, also sallying off in *mock* swarms before the queen will budge. She being more wary, the bees have to wait her time, which may

* Copy blotted.

depend on the state of the weather, or the maturity of the young queens, left behind to regulate the next times of swarming.

Again, that of the bees making or cleaning out the cells of queens about three weeks before they contain perfect insects. On this I have to remark, that a queen bee cannot make cells, and that we are unacquainted with the manner in which bees communicate with each other. But, as they are of the same sex, perhaps swarming takes its origin from both of the insects. —J. WIGHTON.

"GRAND NATIONAL DAHLIA SHOW."

The great Dahlia Show of the season, was held at St. James's Hall, on the 23rd and 24th instant; but, as a whole, it must be regarded as only a partial success. Though the flowers that were exhibited were really magnificent, yet it is evident that ent blooms of Dahlias are not sufficient of themselves to make a show in such a place as St. James's Hall. The room appeared naked and unfurnished-like, not only from a want of plants, but still more so from a want of visitors, and the latter is not to be wondered at, when sufficient publicity is not given to such occasions. We knew nothing of this Show till the day before, when we, through the courtesy of the Secretary, received a ticket of admission; and, doubtless, many hundreds of our readers were in the same state of ignorance.

DATURA WRIGHTII.

Is it true that this pretty variety is only an annual? [We believe there is no doubt about it.] I sowed a few seeds this spring in a moderate hot-bed, and saved only two plants from an unexpected attack of slugs. I knew nothing of the proper treatment of it, and let it remain in a small pot in a neglected way in an old vinery. A short time ago, one plant showed flower; but one, and that after some patient watching, opened yesterday. My small plant is not more than sixteen inches high, and the length of the flower now blown is a tube of about four inches long. It is really very pretty: the neck and throat are whitish, and the upper part and margin of the cup a most delicate pale blue; indeed, the blue is so diffused, or blended with the white, that you can scarcely know where the blue begins. The colouring is very like that in a *Convulvulus*. There is a faint, pleasant perfume from the flower. If we but understood the proper culture, and could grow a plant with a dozen flowers on it, it would really be a handsome acquisition to the conservatory. If you, or any of your correspondents, can give any information on its habits, culture, &c., it will be desirable.

The flower does not hang, like most others of this class, but it stands up stiff and erect, and therefore wants the grace of the pendent kinds.—AMATEUR.

[We shall be glad to have some information about this flower, as we do not happen to know it.]

QUERIES AND ANSWERS.

MANAGING A MOWING MACHINE.

"In a recent number of THE COTTAGE GARDENER, I remember reading an observation, to the effect that the man who holds the hinder part of Budding's mowing machine should by no means push in the slightest degree. Can you give me a reason for this, as my man, who holds the handles, pushes with all his might, while the boy draws in front? As the man takes care to put the boy to the hardest work, I have rather encouraged him to push, and to take his share of the work."—RUSTICUS.

[Holding the mowing machine is just like holding the plough. Both implements may be pushed with all one's might, and yet nothing gained; on the contrary, the holder of the mowing machine pushes *against* the surface, to get a clean cut, not *along* the surface, to help the lad.]

PROTECTING ORCHARD TREES.

"Having planted two acres with the best varieties of Apples, Pears, and Plums — tall, straight standards, high-

worked,—not caring to incur the expense of protecting each tree, and wattling with thorns being unsightly and scarcely less troublesome,—I am at a loss to know what to do protect the bark from hares, sheep, &c. Would a mixture of aloes and cowdung do? or, as the latter easily washes off, would an application of gas-tar, with the aloes, injure the bark? As I am inclined to think it would, I should be grateful for your opinion. Renewed once a month, with a painter's brush, ought to be sufficient.—A NOVICE."

[Gas-tar is very bad indeed for fruit trees, and ill-smelling applications will not hinder cows, horses, and sheep from rubbing their greasy hides against them, as if they were posts set up for the very purpose. Any mess will keep hares and rabbits from eating the bark, as long as the mess smells very bad, but not longer: No messing, however, will answer for orchard trees: they must be individually protected, if beasts are allowed to graze there. The only question is, which is the least expensive way. No one cares to incur expense, if it can be avoided; but there is no way of getting out of some expense in this instance. The protection must be made with thorns, gorse, or wattling, or your trees will be ruined in a few years.]

PEARS WHICH SUCCEED IN LANCASHIRE.

I NOW send you a list of Pears which are excellent in Lancashire:—*Jargonelle*; *Aston Town* (first-rate on a south-wall); *Beurré Grise*; *Comte de Lamy*; *Marie Louise*; *Beurré Bosc*; *Crassane*; *Glout Morceau*; *Bonne de Malines*; and *Beurré Rance*. It would be easy to add to this list, but it is sufficient. I have, as usual, a heavy crop of *Beurré de Capiau-mont* this year, and the Pears are very large this season; but I consider this variety quite second-rate, though, as Mr. Errington says, a capital stop-gap. Is it necessary to add, that all these Pears, except the *Aston Town*, require a wall, and, of course, not a north aspect?—W. C.

YUCCA GLORIOSA.—I beg to send you an account of a fine *Yucca gloriosa* which bloomed here this summer. Its total height from the ground was thirteen feet, and the length of the flower-stem nine feet. Nearly eight feet of this stem was covered with expanded blooms upon forty spikelets. It was truly a "glorious" flower.—J. COLGATE, *Gardener to W. F. Wolley Esq., Campden House, Kensington.*

TO CORRESPONDENTS.

POMPONE (*A Correspondent*).—Our correspondent asks for "the history of the word *Pompone*, as applied to the *Chrysanthemum*." We shall be obliged by information on the subject.

GRAPES SHANKING (*An Old Subscriber*).—The sulphur used by your gardener, though he wrongly applied it on bricks so hot as to injure the leaves, had nothing to do with the shanking of the Grapes. This disease occurs, apparently, from the roots not supplying the sap so fast as the fruit requires it. More warmth and more moisture to the soil, or better drainage, if the borders are wet and cold, usually prevents its occurrence.

BLACKBERRY WINE (*Rose Adela*).—See an answer to the same query at page 400. We extracted the recipe from an American paper.

MEALY BUG (*W. H. H.*).—Wash the leaves of your seedling Apples with tobacco water. There is no mode known of preventing the underground grubs attacking the stems of Cabbages. We search for them round a destroyed plant, kill them, and put in another plant.

GRUBS IN STRAWBERRY BED (*G. D.*).—They are the larvæ of the common cockchafer (*Melolontha vulgaris*). We know of no means of destroying them, except digging up the bed and searching for them.

ONWARDS POTATO (*V. A. M.*).—Send twenty-four postage stamps, with your direction, to Mr. Smith, at Mr. Barelay's, Printer, Winchester, and you shall have some seed by rail.

HOLCUS SACCHARATUS (*A. A.*).—Cut it down, and protect the stool through the winter, by covering it with coal ashes. It is a biennial. It may produce seed in your warm Somerset garden. *Indian Maize* is best sown in a moderate hot-bed in March, and the plants put out into the open ground at the end of May. Sometimes it will ripen its heads if sown in the open ground in March.

CLUB-ROOT (*H. A. S.*).—Avoid growing the Cabbageworts, such as Broccoli, Cabbages, Cauliflowers, Brussel Sprouts, &c., as successional crops. As your ground is dry and sandy, put elay, chalk, and manure upon it abundantly; give your plants plenty of liquid manure, such as house sewage; and hoe the ground between the plants frequently. You will then have done all you can, and most probably effectually, to prevent the club-root or ambury.

CELERY LEAVES GRUB EATEN (*A Yorkshireman*).—They were attacked by the grub of the Celery fly (*Tephritis onopordinis*). We

know of no remedy but picking off the affected leaves and burning them. This prevents a brood next year too. You will see a drawing and description of the insect, in *THE COTTAGE GARDENER*, Vol. I., page 73, and in the *Cottage Gardeners' Dictionary*.

PRICE OF TRITOMA AND TRITONIA (*J. S.*).—You will have seen what Mr. Beaton said last week, in answer to another correspondent. We will reply about your furnace in our next number.

MARIE LOUISE PEAR UNFRUITFUL (*J. C. B.*).—Root-prune gradually and carefully, as directed by "G. C.," at page 378. Try ringing one or two branches of your vigorous tree. Cut the rings quite down to the wood next spring, as soon as the blossom-buds begin to open.

REMOVING BULBS (*Jane*).—Hyacinths, Tulips, Narcissus, and Crocus, will remove as soon as they are out of flower. Anemones and Ranunculuses, will not remove well, unless they are in strong soil, and can be lifted with balls. The bulb will do with or without balls, if carefully handled, and very well attended to after removal. An open place, but away from the sun, is best, and they must be watered, roots and tops, daily, until the leaves change colour.

FLOWERS IN A SMOKY TOWN (*J. B. Smith*).—The two Roses you name, and all the Roses which we could mention, will not do well in any town where they do not consume all the smoke. But the *Calystegia pubescens simplex* will climb up twice or three times the height of the double kind, in any town garden in the three kingdoms. It is now up to a town bedroom window, eighteen feet from the front garden; and it was only planted out last spring, from a 48-pot, and it made roots enough for one thousand such plants another spring. The right way, however, would be to plant abundance of it among evergreen shrubs, along the banks of a lake, or up the slopes of a waterfall, and all damp, dark places in wildernesses. It blooms from June to October. Ours has been very much admired. Apply to any florist for the *Calystegia*.

MODE OF HEATING A SMALL CONSERVATORY (*Honore et Virtute*).—You have, very commendably, given many particulars, and yet not quite enough to enable us to decide what would be the very best mode in your circumstances. For instance, what is the room used for that below the drawing-room, and where the gas is laid on? If that room is a kitchen, furnished with a boiler closed on the top, and supplied by a cistern and ball some two feet or so above the floor of your conservatory, then from that boiler you might heat your conservatory without more trouble than collecting the live cinders close to the boiler on a very cold night. We know of several instances where this mode answers admirably. Two iron pipes are fixed on the boiler, about a yard in length, and from thence, if the distance is at all great or circuitous, lead pipes are used, about the same size in diameter; and these again communicate with iron, and, in some cases, with tin pipes, inside the house, of some three inches in diameter. The first are the most lasting; the latter are cheap, and will last a number of years, especially if kept from rusting. For such a house you would want from twenty-four to thirty feet of three-inch pipe to keep your house comfortable in all weathers. Of course, you would require stop-cocks, to prevent the heat coming in in fine, warm weather. A little heat in dull weather would always be an advantage, because enabling you to give more air. To prevent the necessity of keeping a little fire in the kitchen fireplace at night, other amateurs have had a small furnace and boiler placed in the kitchen, and only lit the fire when necessary. We have not had much personal supervision of heating such places by gas, and, therefore, would rather direct you to previous volumes for information on this subject. But one thing is certain, the gas itself cannot be too rigidly excluded from a house in which plants are grown. Plants suffer greatly in towns by being kept in rooms where gas is burned. There is not only a little escape of the gas at times, but the burning of large lights dries the air and robs it of its oxygen. In all cases of heating plant-houses with gas, we prefer that the gas-burner should be outside the house to be heated. We have no doubt that such a house as yours would be kept safe by having a large inverted funnel over a large burner, communicating with thirty feet or so of inch and a half piping inside the conservatory, and the end of the piping opening to the external air. We lately saw a house, much the same as yours, abutting on a drawing room, the drawing-room being above the kitchen and scullery. The house, we think, was ten feet by seven. In a corner of the scullery, just over one end of the conservatory, was placed a large gas-burner, which could be lowered to be lighted at pleasure. A tin kettle, about fifteen inches in diameter, was placed over it, or, rather, round it; as the bottom was so hollowed upwards, that in no part was there more than two inches depth, or, rather, width of water. Two three-inch pipes of the same material went from the kettle round the front and two ends, and nothing could answer better. It had then been up several years, and had required no repairs or attention, except brushing the bottom of the kettle clean every night before lighting. You should also see an account of Thomson's gas-stoves; but in every case we advise that the gas-burner be outside of the plant-house. Instead of having such burners inside, we would much rather get a small iron stove, such as is used for heating small shops in winter, with a small iron funnel going through the wall somewhere, or even through the roof, by removing a square of glass, and fitting in with an iron pane, using charcoal, coke, or clear cinders, when necessary. If the joints are well luted, there will be little chance of impure air escaping; and though the atmosphere will be dried, that can be easily guarded against by applying moisture, and the crannies in the door and windows, even when air is not given, will supply the oxygen required for combustion. This would be the cheapest, and, on the whole, the least troublesome, except you can command heat from the kitchen boiler, as the water there would generally be hot enough to keep out all frost without any extra firing. In your circumstances, too, with your house raised upon pillars, if you dislike any or all of these, you could place a small furnace and boiler in a corner, and use it only when wanted. You will notice more about heating by moveable furnaces in this day's impression. One thing in using them should be attended to,—it is better to use them longer than to make them too hot, and use them a shorter time for raising the necessary amount of heat. The average heat of 45° in winter, at night, will be quite high enough. In warm nights, a few degrees above it will do no harm. In very cold nights, a sinking from 45°

or 40°, and even 35° for short periods, will be attended with no danger. In sunshine the house may rise from 50° to 60°.

HEATING THREE HOUSES (A. B.).—Unless we would get ourselves into trouble, and very likely lead our readers into disappointment, we must decline entering into the minutiae of what a hot-water apparatus would cost, "fixing and all included." Several times, of late, we have given a general outline, and more cannot, with propriety, be done, by those not engaged in the trade, and with no knowledge of many particular circumstances, such as carriage, making stock-holes, &c. The price of iron varies so much at times, that we should require to consult ironmongers and casters' price-currents frequently, to have any clear idea of these matters. Lately, four-inch pipes could be got for a shilling per foot. Iron is now declining, but we suppose at present they could not be got under 1s. 2d., and joints and elbows extra. A good boiler to heat your range would not be over dear at from £5 to £8, or more. One of our greatest builders and hot-water men, whose range you say yours resembles, and Mr. Jones, who advertises in our columns, would, no doubt, supply you with more minute information, but the above will enable you to form some idea for yourself, of the probable cost. The range consists of a vinery at one end, and a peachery at the other; each thirty feet long, eleven feet and a half wide, ten feet high at back, and five feet high in front. There is a greenhouse or late vinery between them, from which the frost is wished to be merely excluded, thirty-nine feet and a half long, fifteen feet and a half wide, thirteen feet and a half high at back, and six feet and a half in front. Now, as to the questions about the best mode of heating, Grapes and Peaches being wanted by the middle of June. All things considered, hot water would be the most effective, and the cheapest, especially if one boiler was used, though, from the arrangement of the houses, it is difficult to say where that boiler should be placed, without losing heating power. If you resorted to the old mode of heating each house separately, either by boiler or flue, you would have no difficulty in giving each house the temperature you needed; but then, as you would have three furnaces instead of one, what you might gain as to first expense, in pipes, &c., would soon be neutralised in the extra expense for attendance and fuel, there being no question that less fuel would be wasted by carelessness, and the heat mounting up the chimney, by having one fire instead of several. If your range had been double the size, we should still have recommended one furnace, and one boiler for use, but also another beside it, in the way of security. This would hardly be economical in your three houses merely. It might be quite as cheap to have one furnace for the peach-house and greenhouse, with the power of heating either at pleasure, and one for the vinery by itself. You would thus obviate the necessity of heating the greenhouse when not wanted, and, therefore, not lose heat. The same thing could be done, if you had a close shed behind the greenhouse. The furnace and the one boiler could be placed there, and the flow and return-pipes have each three arms furnished with valves, one to go to the greenhouse, one to the vinery, and one to the peachery, as required. The flows, until they entered the two latter, respectively passing through these sheds, and, so far, heating them. If this was inconvenient, and it would be more suitable to have the furnace at the vinery end,—and it would be desirable that much frost should not enter the vinery or Peach-house at any time, but that before forcing commenced they should be used as stores for vegetables or plants,—then the simplest way would be to take a flow and return-pipe from the boiler to the extreme end, and when there was only a little frost, that would be sufficient to keep it out, even from the greenhouse. Besides this general flow and return, each house would have pipes connected with them, to shut off or on the heat at pleasure. These main flow and return-pipes passing through the greenhouse would necessitate an abundance of air in May and June. If there is any doubt of working this properly, it would be, perhaps, the simplest mode to have two furnaces; but the one furnace would give least labour, whether placed at the end or in the middle behind. As it is always advisable not to overheat the pipes for such an early vinery, from ninety to 110 feet of four-inch pipe would be required. For the peach-house about eighty feet would be necessary, and about eighty feet for the greenhouse. We are supposing that all these are above ground. If part are sunk below ground, they will tell less on the temperature of the house. The more the pipes are level, the more equally will they be heated. Where economy seems such an object, we are surprised that everything about heating was not settled and proceeded with whilst the houses were building.

HEATING A SMALL CONSERVATORY BY AN IRON STOVE (A. B. C.).—One very prominent thing you have omitted, nay two, and we mention them that you may be more definite in future. First, the position of your conservatory, and secondly, its size. We like to oblige our correspondents as much as possible, as that is the only and best way to oblige ourselves. But though there is a great improvement in the definiteness of their inquiries, still they will bear a little farther progress in that direction. Your position is that of hundreds. A good stock of plants got ready before October,—enthusiasm warmed to its highest pitch, as to what these plants will do next spring and summer,—to be followed again and again by painful disappointment. In this impression, you will find various modes of heating such small houses as we presume yours to be. You must get above being pooh-poohed, and look upon those who use such terms as silly fellows, and not remarkably distinguished for wisdom. We know that plants are kept well by such methods as you suggest, wherever there is earnestness enough of purpose to make them answer,—for that after all is the great matter. Two or three large bottles, filled with water near the boiling point, and replenished two or three times in a long, cold, frosty night, will keep a severe frost out of a small house, and more especially when covered with a tarpawling. The covering job is no joke, however, in a cold, frosty night, and especially if a keen wind will not allow it to keep quiet without many a fastening; and that is hardly the sort of work for those who must be at business the next day, and, perhaps, wielding a pen with hands as rough as a gardener's. For such a case as yours, we would decidedly recommend a small cast-iron moveable stove, which, with funnel pipe, and altogether, will not cost above £2, or £2 10s. at farthest. Place this in the handiest place, use it in cold weather in winter, and remove it altogether by April or May. Most

of these small upright stoves are made double, that is, a barrel within for the reception of the fuel, &c., and a tube over all. The draught is regulated entirely by the damper at the bottom. Of course, if you want one very ornamental, you must pay more for it. A plain one will suit your purpose just as well. If you must take your tube, or chimney, not through a wall, but upright, through the glass,—a sort of Mushroom cap over it will prevent smoking by back draughts. To show that we do not recommend without book, we will state two facts. A few days ago, we looked over the little garden of a retired tradesman, who has built for himself a nice comfortable house in, what may now be called, the town of Luton, as building there is taking possession of the old suburbs. The front of the house consists of a sloping lawn, filled just thick enough with flower-beds, and these as choke full as our own, with scarlet Geraniums, Calceolarias, and other bedding plants. That no possible space might be lost, rustic baskets, and artistic vases, were placed in the openings, and these, too, grouped and overflowing with flowers, all of which nearly required greenhouse protection in winter. To house all these, we were ushered into a little greenhouse, abutting, we think, on the drawing-room, on the second floor; and up and down stairs, through the house, all these plants must be carried. Having no idea of alluding to it, we do not know the exact measure, but should think about thirty feet long, by five or six feet in width, eight feet high at back, and six feet high in front. The sloping roof was glass, and about half the front height. Here we found some succulents, Oleanders, Fuchsias, and Achimenes, blooming nicely. A sparred shelf runs along the front, and we forget how many narrow ones against the back wall. The Achimenes were shortly to be placed against a wall to dry, and ripen their tubers, and then either be kept in their pots, or paper bags, along with dry sand, in a moderate warm place in the kitchen, so as to be secure from frost. Immediately the house would be pretty well filled with fancy and florist Pelargoniums, which generally bloom admirably. The proprietor was full to overflowing with how he piled his plants on one shelf,—just as a sample of all,—placing lesser pots on the tops of greater, whenever there was room and light for them; while many more, and especially all the old plants of Geraniums, had to be contented with standing on the neat slate floor, being perfectly satisfied if, in winter, he could just get along. We went home with the idea, that this enthusiastic amateur, who now finds his chief pleasure and enjoyment in his garden, could beat many of the best of us in storing past in winter. Now, all this mention of this sweet little garden,—the masses of bloom which would not have disgraced a gardener with a good amount of glass at his command, were procured, in addition to an almost constant show of bloom in-doors, from this little house, and that kept all right, in winter, by one of these small upright iron stoves, with the chimney tube passing through the roof, a foot or so beyond the glass. The second fact is the following:—Thanks to the agitation of sanitary principles, there is a beautiful general cemetery at Luton. The town has all the advantages of competition, as there is also a new Church cemetery. In the general one there is a lean-to greenhouse, some sixty feet by twelve feet, height at back ten feet, and front about five feet. This was intended chiefly for the rearing of plants for ornamenting the cemetery, and filling up the time of the superintendent, with the proviso, that what could be sold should be placed to the general account. The whole has been under the superintendence of Mr. Godfrey, a thoroughly practical gardener, though previously having little or no practice with these iron stoves. In such a large place it might have been possible to have turned every plant into beds round the cemetery walks; but we presume this was not the wish of the managing committee. However, if this was not done, the beds were made showy, and we should be afraid to state the money taken for bedding plants this season at so much per dozen. We called there in passing last week, and saw a beautiful crop of Grapes, good bunches, and well coloured, cut at so much per pound, as people came for them. (Many had been cut previously.) Now, that crop of Grapes, which many a gentleman might envy, and the many hundreds of nice healthy bedding plants planted out and sold in May, were obtained in that house with the assistance of two of these iron stoves. Lest we should be mistaken, we applied to Mr. Godfrey recently for information on several points; and he states, "I had the two stoves from Messrs. Brown & Green, at a cost of £2 each, not including piping. The piping is about 7 feet from the top of the stove. It passes through the glass roof about 18 inches, and is there screened by a mushroom-like eowl. The barrel of the stove is lifted out in lighting. There being a current of air round the barrel, no sulphurous fumes are perceptible. Now and then a puff of smoke will come out when first lighted, but that is soon over, for as soon as the stove gets hot there will be no more smoke. I tried several kinds of coal, but none answered well. I have no trouble with good coke, broken about as small as walnuts. The cost last season, from October to March, was 25s. I can regulate the heat, by regulating the draught by the damper at the bottom. So that now, after a little practice, I have them thoroughly under control. In cold nights I have made up a fire at bedtime, and found a good fire next morning. By proper attention to cleaning the bars, and attending to the damper, I have had fire in them for ten hours without attendance. It would be very easy to make these stoves red hot, but that must be avoided. It is safer to keep the heat in longer, and have it milder. The smoke tube is valuable for getting rid of the smoke, &c., I depend on the stove and its surface for heating the house. These stoves have quite enough to do with this house sixty feet long. I consider one would do well in a house from twenty to twenty-five feet in length. Where nothing much in the way of forcing is required, but the keeping of Geraniums, and bedding plants safe over the winter, these iron stoves, or an Arnott's brick stove, I have found in many cases to be quite sufficient for the purpose. If the atmosphere gets too dry that is easily remedied."—R. FISHER.

NAMES OF PLANTS (Mrs. J. C. Williams).—Your plant is *Begonia parvifolia*, or small-leaved Begonia. (A. D. S.).—Your large bulb is *Ornithogalum caudatum*, or long-spiked Star of Bethlehem, and your plant, *Fuchsia serratifolia*. (F. W. S.).—Your Fern is the broad-fronded variety of *Athyrium filix-femina*. (J. H. B.).—We do not recognise your plant from the leaves sent. (T. T. W.).—The purple Heath, or fine-leaved Heath, is the *Erica cinerea*. The other is the *Erica vulgaris*, the common Heath, or Ling, now called *Calluna vulgaris*. The pollen gathered from Heath, by bees, is yellowish grey.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

OCTOBER 7th and 8th. WORCESTERSHIRE. *Sec.*, Mr. G. Griffiths, 7, St. Swithin's Lane, Worcester. Entries close September 23.
 OCTOBER 13th and 14th. CREWE. *Sec.*, D. Margetts, Crewe. Entries close 30th September.
 NOVEMBER 29th and 30th, DECEMBER 1st and 2nd. BIRMINGHAM. *Sec.*, Mr. J. Morgan. Entries close November 1st.
 DECEMBER 17th and 18th. HALIFAX FANCY PIGEON SHOW. *Sec.*, Mr. H. Holdsworth, 57, Woolshops, Halifax. Entries close the 20th of November.
 JANUARY 8th, 10th, 11th, and 12th, 1859. CRYSTAL PALACE (WINTER SHOW). *Sec.*, W. Houghton.
 JANUARY 20th and 21st, 1859. LIVERPOOL.
 FEBRUARY 3rd and 4th, 1859. PRESTON AND NORTH LANCASHIRE. *Secs.* R. Teebay, and H. Oakley.
 FEBRUARY 9th and 10th, 1859. ULVERSTONE. *Sec.*, Thos. Robinson.
 JANUARY 3rd, 1859. KIRKCALDY POULTRY AND FANCY BIRD SHOW.
 N.B.—*Secretaries will oblige us by sending early copies of their lists.*

BRIDGENORTH POULTRY EXHIBITION.

BRIDGENORTH has ever maintained a high reputation for the excellency and spirited character of its annual poultry shows, and the one just concluded has not proved itself less meritorious than its predecessors. It was held this year in the newly-erected Market Hall, a building peculiarly adapted to the purpose. The ventilation is perfect, the light excellent and general, besides which, the ample space affords every accommodation. It is almost needless to say, the Committee again carried out their painstaking efforts to promote the welfare and comfort of the poultry confided to them, and it is only rarely we have witnessed a show of chickens (unaccustomed, as they of necessity must be, to the restraints of an exhibition pen), where the birds themselves seemed so quiet and contented.

The class for *Cochin* chickens was a superior one. The birds exhibited by Mr. H. Tomlinson, of Birmingham, were a very close approach to perfection, and certainly did high credit to that gentleman's poultry-yard. Their colour was the clearest buff. The second prize pen (Partridge-coloured), the property of Mr. Churchill, of Gloucester, were also of very high character.

The *Grey Dorkings*, with the exception of a pen of Silver Greys, sent by Mr. Chune, of Coalbrookdale, which were exceedingly good, and well matched, betrayed a falling off from those shown at Bridgenorth on former occasions.

Among the *Black-breasted Game*, perhaps the best pen of chickens that have ever, as yet, been exhibited to the public, at any meeting, here or elsewhere, took first honours; as will be seen, they belonged to that well-experienced exhibitor, Mr. Archer. The cockerel in this pen was the subject of universal admiration, which he justly deserved, and although many grave doubts were whispered in the room, as to his chickenhood, it is both our opinion, and that of the Judge, Mr. E. Hewitt, of Birmingham, that there was no well-grounded reason to question the correctness of the entry. If all goes well, no doubt this bird will be found during the coming season, again maintaining his high position against all competitors. He is the perfection of neatness, combined with great muscularity. His colour, too, is faultless. The other classes of *Game* contained many excellent birds, but obviously, as yet, quite too young "to show" to advantage.

As anticipated, the *Hamburgh* classes were first-rate, Messrs. Areher and Chune evidently mustering most of their strength, as the decisions in these four classes it was presumed, would tell heavily for the "Collection Cup." The display in these classes was, consequently, a show in itself; and in the principal pens of peneilled chickens, it would be difficult to suggest any improvement.

The *Polands*, particularly the white-crested, were first-rate specimens,—Bridgenorth, in the person of E. W. Haslewood, Esq., monopolising the premiums almost without exception.

The *Spanish* class was a weak one, although several extraordinary pullets were exhibited.

The *Any other Variety* class contained specimens worthy of any poultry meeting.

The *Bantams* of all kinds competed together. The *Game* varieties were well worthy of close inspection, and drew around them constant groups of visitors. Among the *Sebrights*

we noticed two disqualified pens, from the introduction of adult birds, although the rules confined the Show exclusively to chickens.

The *White Aylesbury*, and *Buenos Ayres Ducks*, were specimens of the closest attention to breeding; it would be useless to desire better.

The great interest, however, arose respecting the *Collection Cup*, value seven guineas. It was richly embossed, with a pair of shields for the use of the engraver, when the individuality of its future possessor should be decided. It is a somewhat singular circumstance, that "the Cup for Bridgenorth," has hitherto "invariably left the county;" nor has it ever been won at all, otherwise than with extreme difficulty,—a single point, or even half a point, being usually the difference between the lucky owner and his nearest competitor. The latter result was the same on this present occasion, Mr. Chune securing $23\frac{1}{2}$ points, against Mr. Areher's $22\frac{1}{2}$ points. The written directions, by which the decision was arrived at, were given by the Committee into the hands of the Judge, and were as follows:—"A first prize to count three points, a second two points, a highly commended pen one point, whilst a single commendation only was to count but half a point," the aggregate being thus easily attained was decisive.

A reference to the appended prize list will at once prove how difficult was winning, "the head of the poll" being first in favour of one of the rivals, then the other. This change of places after being often renewed, eventually settled down, as before stated, by the Cup remaining, this year, in the county; and many were the congratulations of the *Salopians*, that after so hardly won a fight, it should be so. It was generally acknowledged that every available effort of either competitor was strained to the utmost, to secure a triumph.

The Bridgenorth Show has, most unhappily, assumed almost the character of a "household word," for being always held during unpropitious weather. This year we were glad to find a more comfortable result; all was fair, and the Show went off satisfactorily. There was, however, one little alteration on the practices of former years, that might possibly lead to another consideration, viz.:—"Whether or not it is politic to divide the *Agricultural and Poultry Exhibitions*, when thus held simultaneously." It is no less singular than true, however strange it may appear at first sight, that several visitors left Bridgenorth, labouring under the mistaken impression that poultry no longer held its own position at this year's meeting. Even a few posting bills might have obviated that mistaken notion.

SILVER CUP to J. B. Chune, Coalbrookdale.

COCHIN-CHINA (any colour except White or Black).—First, H. Tomlinson, Balsall Heath Road, Birmingham. Second, H. Churchill, Gloucester (Partridge). Commended, J. Priece, Londonderry, near Bedale; A. F. Watkin, Walkley, near Sheffield (Buff). (A very good class.)

COCHIN-CHINA (White or Black).—No entry.

DORKINGS.—First, J. B. Chune, Coalbrookdale. Second, J. Priece, Londonderry, near Bedale. Highly Commended, E. Areher, Malvern. Commended, C. H. Wakefield, Malvern Wells.

GAME (Black-breasted, and other Reds).—First, E. Areher, Malvern. Second, Messrs. Bullock and Rapson, Leamington. Highly Commended, W. Chatling, Wandsworth. Commended, W. Chatling.

GAME (White and Piles).—First, E. Archer, Malvern. Second, J. B. Chune, Coalbrookdale. Commended, J. B. Chune, Coalbrookdale.

GAME (Duckwings, and other Greys and Blues).—First, T. H. D. Bayley, Iekwell House, Biggleswade, Beds. Second, W. Chatling, Wandsworth. Highly Commended, H. Churchill, Gloucester.

GAME (any other variety).—First and Second, J. B. Chune, Coalbrookdale (Black). Commended, Messrs. Bullock and Rapson, Leamington (Black).

HAMBURGS (Golden-peneilled).—First and Second, E. Areher, Malvern. Highly Commended, J. B. Chune, Coalbrookdale. (A superior class.)

HAMBURGS (Golden-spangled).—First and Second, J. B. Chune, Coalbrookdale. Commended, J. Barnforth, Holmfirth, Huddersfield.

HAMBURGS (Silver-peneilled).—First and Second, E. Areher, Malvern. Highly Commended, J. B. Chune, Coalbrookdale. Commended, E. Areher, Malvern. (A beautiful class.)

HAMBURGS (Silver-spangled).—First, E. Areher, Malvern. Second, J. B. Chune, Coalbrookdale.

POLANDS (Black with White Crests).—First, J. Barnforth, Holmfirth, Huddersfield. Second, Mrs. Blay, St. George's Square, Worcester. Commended, G. Ray, Minestead, Lyndhurst, Hants; E. W. Haslewood, Bridgenorth. (A highly deserving class.)

POLANDS (Golden-spangled).—First and Second, E. W. Haslewood, Bridgenorth.

POLANDS (Silver-spangled).—First and Second, E. W. Haslewood, Bridgenorth.

SPANISH.—First, H. Tomlinson, Balsall Heath Road, Birmingham. Second, A. F. Watkin, Walkley, near Sheffield.

SPANISH (any other variety).—First, G. M. Kettle, Dallieott House, Bridgenorth (Cuckoo Fowls). Second, A. F. Watkin, Walkley, near

Sheffield (Sultanas). Highly Commended, — Beay, St. George's Square, Worcester (White Polands). Commended, G. M. Kettle (Cuckoo Fowls); H. Churchill, Gloucester (Buff Polands); Mrs. Boycott, Stanmore Grove, Bridgenorth. (The whole class good.)
 BANTAMS.—First, T. H. D. Bayley. Second, E. Archer. Highly Commended, H. Tomlinson.
 Ducks (White Aylesbury).—First and Second, J. Price. Highly Commended, J. Pritchard, Hill Farm, Bridgenorth. Commended, H. Smith, jun., Sutton Maddock, Shiffnal; G. Pritchard, Astley Abbots; Messrs. Bullock and Rapson.
 Ducks (any other variety).—First, H. Churchill (Black East Indian). Second, J. B. Chune (Buenos Ayres). Highly Commended, H. Churchill (Black East Indian). Commended, J. Price (Black East Indian and Rouen).
 EXTRA.—Highly Commended, G. Pritchard (Turkeys); E. W. Haslewood (Black Poland). Commended, E. W. Haslewood (Game Cockerel and Duckwing Game).

BUYERS AND SELLERS.

A CORRESPONDENT in your valuable paper of the 7th of September, under the signature "M. S. Y.," remarks upon the uncertainty that must frequently attend advertisements for the sale or purchase of poultry, rabbits, &c. I have lately experienced a similar inconvenience to that he complains of, and to which I beg to draw your kind attention. I only wish I could propose a remedy. A few weeks since, I advertised, in your columns, Cochin-China fowls, and lop-eared rabbits, for which I received numerous applications from parties at Liverpool, Birmingham, and other equally distant places, but, with one exception, all without reference, beyond the name and address. On the other hand, who would send a post-office order, trusting entirely to the advertiser's description. It is true, that I have disposed of part of my stock nearer home; but, for your guidance, permit me to say, that I conceive it your interest to advise both buyers and sellers, each to put himself in the place of the other, and not to take offence at the refusal to send an order to a mere address, without any guarantee for the payment.—TRING.

[So many have been swindled of their poultry, pigeons, and rabbits, by sending them, without prepayment, to unknown applicants, that no one should be offended, if required to give a reference, or to prepay, with the promise from the vendor to return the money after deducting carriage expenses, if the animals sold were not approved. Whoever objects to adopt one or other of these alternatives has no reason with which to sustain his objection.—ED.]

CURIOUS RESULT OF A CROSS.

IN April I purchased a Bantam hen, and it is about her chickens that I wish to write. At that time I had no male bird capable of breeding. When I bought her she was running with a Silver-pencilled Hamburgh cock. In a few days after I bought her she laid (having been laying with her former owner), and continued laying till the end of May. A fortnight before she finished laying, one of my hens wanted to sit; nine eggs were put under her; four of them were laid by this Bantam, the remaining five by hens of mine that had been in the yard for two months, and whose eggs, as I had no cock, must have been unimpregnated. All the four eggs hatched, and the chickens are now alive and well. To their colour I would call attention. One is a cockerel, and marked with two great blotches of black, like the birds produced by a cross between the Silver-pencilled and Silver-spangled Hamburghs. Of the three pullets, one is a well-marked Golden-pencilled Hamburgh, the remaining two being Silver-pencilled; with this difference, that one has the neck hackle pure white and the other quite black.—C. S. KENNY.

POLAND FOWLS.

HAVING observed, in THE POULTRY CHRONICLE, that the Poland classes at the different poultry shows, which have taken place this summer, have been so badly supported, I cannot resist making a remark which may account for it, and in which, I think, all breeders of Polands will agree,—that no young chickens show so badly as the Polands, and, consequently, at these early shows, it is not surprising to see the pens allotted to them comparatively empty. Moreover, all the

old birds are now in bad feather from moulting. I have no doubt that, when the autumn and winter shows take place, the Polands will neither be deficient in number nor quality. The Polands, in addition to their handsome appearance, are excellent layers, and good for the table. Where there is no great space to keep poultry, they have an advantage over many other sorts, as I find the old birds do better in yards than running,—from not being able to see well, owing to their topknots, they get into danger. I find the young Gold and Silver Poland chickens much hardier, and I have less trouble in rearing them, than many other sorts. Indeed, I rarely lose a Poland chicken, except from accident; and I have never yet found roup break out in them, unless it has been brought by other birds. My yards have rather more than one-third gravel, and the remainder divided into one half grass, which is put in fresh every winter, and the other half mould, for the birds to scratch in, with a little heap of stable-manure: They have a shed in one corner, made of some rough boards, and thatched, to retire to in bad weather, and where they have a "dust bath." Their roosting-houses are dry, warm, and free from draughts of air. Being confined in yards, great cleanliness, wholesome food, and fresh water daily, are essentials to their well-doing.—A POLAND ADMIRER.

HORWICH POULTRY SHOW.

On the 15th of September the Horwich Agricultural Society held their ninth annual meeting, when the usual exhibition of poultry took place. It is very gratifying to note the marked improvement shown each year since the commencement, this year the poultry excelling all former ones, both in quantity and quality. The Judge, Mr. Joseph Tate, of Syke Hill, Preston, found the office no sinecure; but his superior knowledge enabled him to give the prizes with satisfaction to the exhibitors.—WILLIAM EATON, *Secretary*.

GAME.—Prize, J. Fletcher, Stoneclough, near Manchester. Five entries. *Chickens*.—First, J. Longworth, Horwich. Second, J. Fletcher, Stoneclough, near Manchester. Thirteen entries.

SPANISH.—No competition. *Chickens*.—First, R. Wright, Wrightington, near Wigan. Second, Lord Crawford, Haigh Hall. Two entries.

HAMBURGH (Golden-pencilled).—First, J. Fletcher, Stoneclough, near Manchester. Three entries. *Chickens*.—First, J. Fletcher. Second, R. Bancroft, Brightmet, near Bolton. Seven entries.

HAMBURGH (Silver-pencilled).—First, R. Wright, Wrightington, near Wigan. Three entries. *Chickens*.—First, E. Price, Halliwell. Second, E. Crompton, Over Hulton. Eight entries.

HAMBURGH (Golden-spangled).—First, E. Whittaker, Egerton, near Bolton. Five entries. *Chickens*.—First, W. Chester, Horwich. Second, R. Wright, Part Chowlent, near Manchester. Eleven entries.

HAMBURGH (Silver-spangled).—No competition. *Chickens*.—First, E. Chester, Horwich. Second, W. Chester, Horwich. Six entries.

DORKINGS.—First, W. Sansom, Chorley. Two entries. *Chickens*.—First and Second, J. Kifford, Halliwell. Four entries.

BANTAMS.—First, W. Sansom, Chorley. Second, W. Booth, Horwich. Seven entries.

ANY OTHER VARIETY.—First, J. Holmes, Wigan (Buff Cochins). Second, J. Kifford, Halliwell (Dorkings). Ten entries.

TURKEYS.—First, Catherine Smith, Haigh, near Wigan. Second, J. Wood, Haigh. Five entries.

GEESE.—First, L. Walls, Blackrod. Second, J. Longworth, Horwich. Five entries.

GOSLINGS.—First, L. Walls, Blackrod. Second, J. Markland, Lostock. Four entries.

DUCKS.—First, Mrs. C. H. Colemans, Horwich. Second, T. H. Colemans, Horwich. Six entries.

OUR LETTER BOX.

TUMBLER PIGEONS (*E. F.*).—Write to Mr. J. Paton.

FATTENING GEESE (*Answer*).—Our sympathies are enlisted on behalf of a stubble Goose. It is generally fat and has always a deeper cut on the breast than any other. If, however, you have no stubbles over which they may wander, shut them up in an old pigsty, or similar place, and feed them well on good oats, adding thereto gravel, and such green meat as may be convenient. Their food must be given in water, and they will fat in a fortnight.

LONDON MARKETS.—SEPTEMBER 27TH.

POULTRY.

There has been but a scanty supply of poultry during the week, and prices have somewhat improved in consequence.

	Each.		Each.
Large Fowls ...	4s. 6d. to 5s. 0d.	Hares	2s. 6d. to 3s. 0d.
Small ditto.....	3 0 " 3 6	Partridges	0 4 " 0 9
Chickens.....	2 0 " 2 6	Grouse.....	3 0 " 3 6
Geese	6 0 " 8 0	Rabbits	1 3 " 1 4
Ducks	2 3 " 2 9	Wild ditto.....	0 8 " 0 9
		Pigeons.....	8d. to 9d.





